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Note

LIBOR: The World's Most Important Headache

Alec Foote Mitchell*

INTRODUCTION

Imagine your friend has an appointment, but today she forgot her watch. In return for giving you \$50, she wants you to keep an eye on the clock. But in the middle of the day, the clock suddenly vanishes. There might be some alternatives: you could use the sun to estimate the time, look to the traffic to see when rush hour starts, or you could guess. But how do you know whether those alternatives are sufficient? What seemed to be a simple contract was premised on a basic assumption: your clock would not disappear. But once it did, it threw the entire agreement into question and could result in your friend missing her appointment and you losing the \$50.

In finance, many contracts are based on a similar premise: the availability of LIBOR. The London Inter-Bank Offered Rate, known as LIBOR, has been dubbed “the world’s most important number.”¹ The rate is ubiquitous in global finance, where it underlies almost \$350 trillion in financial contracts² and is meant to measure the estimated

* J.D. Candidate 2021, University of Minnesota Law School. For my Mom and Dad, whose patience and guidance taught me that improving writing skills is a never-ending pursuit. To my sisters, whose intelligence and hard work have provided me with a source of continual inspiration. Special thanks to the editors and staff members of the *Minnesota Law Review*, whose work is often unnoticed but greatly improves legal scholarship, and to Professor Claire Hill for her feedback throughout my authorship of this Note. All work herein is my own and is based solely on publicly available information. Copyright © 2021 by Alec Foote Mitchell.

1. David Enrich, *LIBOR: A Eulogy for the World's Most Important Number*, FOX BUS. (July 27, 2017, 4:38 PM), <https://www.foxbusiness.com/features/libor-a-eulogy-for-the-worlds-most-important-number-update> [<https://perma.cc/AFP2-FFBM>].

2. INTERCONTINENTAL EXCH., POSITION PAPER ON THE EVOLUTION OF ICE LIBOR ¶ 9.1 (2014) [hereinafter ICE POSITION PAPER], https://www.theice.com/publicdocs/ICE_LIBOR_Position_Paper.pdf [<https://perma.cc/M4R3-M6TU>].

cost for banks³ to lend money to one another.⁴ And in 2023, it is vanishing.⁵ The world's most important number is fast becoming the world's most important headache: how do we replace LIBOR?

Central banks, private banks, and trade groups are scrambling to find alternatives, with some success. Alternative rates have been created to replace LIBOR.⁶ New financial contracts are starting to reference different rates.⁷ But there is one area where an answer remains elusive: legacy contracts. Legacy contracts reference LIBOR but do not end before LIBOR discontinues.⁸ After 2023, a core component of these contracts will reference a nonexistent rate, leaving parties unsure of how to measure payments.

Some legacy contracts have clear fallback language providing for the replacement of LIBOR, presenting little risk to the financial system.⁹ But most legacy contracts face one of two legal problems. A

3. References to "banks" in this Note will be used interchangeably to describe what are technically known as "financial institutions." Traditional banks are depository institutions known to most consumers, while financial institutions include a range of services and companies within the financial services sector. *See, e.g.*, 15 U.S.C. § 6805(a) (listing the range of financial institutions to include banks, credit unions, broker/dealers, investment companies, insurance companies, and other financial services companies regulated by a host of state and federal regulators).

4. *ICE LIBOR*, INTERCONTINENTAL EXCH., <https://www.theice.com/iba/libor> [<https://perma.cc/87S5-EW5T>].

5. *See* Jill Treanor, *LIBOR Interest Rate To Be Phased Out After String of Scandals*, GUARDIAN (July 27, 2017, 2:13 AM), <https://www.theguardian.com/business/2017/jul/27/libor-interest-rate-phased-out-scandals> [<https://perma.cc/WG8J-QABJ>]; Howard Schneider, Huw Jones & Kate Duguid, *Key Dollar Libor Rates Get 18-Month Stay of Execution*, REUTERS (Nov. 30, 2020, 8:44 AM), <https://www.reuters.com/article/us-usa-fed-libor/key-dollar-libor-rates-get-18-month-stay-of-execution-idUKKBN28A1ZL> [<https://perma.cc/WT7S-MSNX>].

6. *See infra* Part I.E.

7. *See, e.g.*, INT'L SWAPS & DERIVATIVES ASS'N, INTEREST RATE BENCHMARKS REVIEW 2-4 (2020), <https://www.isda.org/a/W5LTE/Interest-Rate-Benchmarks-Review-Full-Year-2019-and-Q4-2019.pdf> [<https://perma.cc/FFE7-TZ89>] (showing the value of derivatives traded based on risk-free rates like SOFR, SONIA, SARON, TONAR, and €STR).

8. Howard S. Altarescu, Nikiforos Mathews & Andrew J. Morris, *The Transition from LIBOR: A Report at the Halfway Mark*, A.B.A. (Nov. 1, 2019), https://www.americanbar.org/groups/business_law/publications/committee_newsletters/banking/2019/201911/fa_2 [<https://perma.cc/L94D-UW69>].

9. WHEATLEY REV., THE WHEATLEY REVIEW OF LIBOR § 5.29-.33 (2012), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/191762/wheatley_review_libor_finalreport_280912.pdf [<https://perma.cc/7FQC-UFCZ>].

minority of contracts have no fallback language at all.¹⁰ Thankfully, the lack of language gives state legislatures and courts numerous options to resolve the issue.¹¹ The tougher class of legacy contracts suffers from the opposite problem: fallback language to replace LIBOR that does not work in reality.¹² Legislatures and courts have fewer traditional options to solve these contracts because the parties actually have an agreement in place, albeit an unworkable one.

Parties to contracts, courts, and legislatures have a number of methods to deal with contractual flaws. The parties themselves can directly renegotiate or amend contract terms;¹³ courts can reform, rescind, or void provisions;¹⁴ or state legislatures can pass legislation to ease the transition.¹⁵ But LIBOR's centrality to the financial system means one thing: something must be done with legacy contracts before 2023.

Part I of this Note will begin by describing the need for LIBOR, its historical development, and how it is calculated today. Part I will also discuss the LIBOR scandal, the proposed end of its publication, and potential replacement reference rates. Part II will outline why LIBOR's discontinuation is important and the extent of the discontinuation's impact on financial markets. It will discuss at-risk financial contracts and outline how they deal (or do not deal) with LIBOR's discontinuation. Finally, Part III will argue for a three-tiered approach to solving the U.S. dollar (USD) LIBOR legacy contract issue. For those contracts with clear and workable fallback language, courts and legislatures should take no action. For contracts with no fallback language, state legislatures should pass narrow legislation inserting a replacement reference rate if private amendments cannot be reached. Finally, for those contracts with unworkable fallback language, legislatures should allow individual parties to either accept the chosen replacement reference rate or face mandatory settlement conferences and

10. See, e.g., PAUL RICHARDS, INT'L CAP. MKT. ASS'N, THE TRANSITION FROM LIBOR TO RISK-FREE RATES: LEGACY BONDS 2 (2020), https://www.icmagroup.org/assets/documents/Regulatory/Quarterly_Reports/Articles/QR-article-The-transition-from-LIBOR-to-risk-free-rates-legacy-bonds-130120.pdf [<https://perma.cc/NE5T-DEZB>] ("Some legacy bonds may have fallback language which is unclear or have no fallback provisions at all.").

11. *Id.*

12. *Id.*

13. 22A N.Y. JURIS. 2d *Contracts* § 475 (2019).

14. 16 N.Y. JURIS. 2d *Cancellation of Instruments* §§ 13, 63 (2019).

15. See, e.g., N.Y. GEN. OBLIG. LAW § 5-1602 (McKinney 2020) (authorizing the euro as a "commercially reasonable substitute" for contracts containing currencies replaced by the euro).

potential litigation in front of courts with additional equitable powers to reform LIBOR-based contracts.

I. LIBOR EXPLAINED

LIBOR plays a critical role in the financial world by providing contractual stability. The rate is a measurement of the interest financial institutions charge to each other for unsecured loans.¹⁶ For example, say Bank *A* ends the business day and finds it needs additional cash. Bank *B* agrees to provide *A* with the necessary cash. *B* knows *A* is reliable, so they do not require it to provide any collateral,¹⁷ meaning it is an “unsecured loan.” However, as with most loans, *B* charges *A* an interest rate to borrow the money. This interest rate, on the unsecured loan from *B* to *A*, is what LIBOR looks to measure.

A. LIBOR IS NECESSARY BECAUSE IT PROVIDES CONTRACTUAL STABILITY

LIBOR is a reference rate, a broad category of numbers used as benchmarks to set interest rates.¹⁸ Reference rates generally help parties to financial contracts estimate the cost of exchanging money, preventing an information mismatch in financial transactions.¹⁹

16. See WHEATLEY REV., *supra* note 9, § 1.1.

17. Collateral is property that a borrowing party will pledge to the lender in the event that the borrower fails to pay back the agreed upon amount. Julia Kagan, *Collateral*, INVESTOPEDIA (Aug. 5, 2020), <https://www.investopedia.com/terms/c/collateral.asp> [https://perma.cc/5N5N-7ZS8].

18. Divya Kirti, *What Are Reference Rates For?* 1 (Int’l Monetary Fund, Working Paper No. WP/17/13, 2017), <https://www.imf.org/~media/Files/Publications/WP/wp1713.ashx> [https://perma.cc/C63B-H8L7].

19. *Reference Rates*, FED. RSRV. BANK N.Y., <https://www.newyorkfed.org/markets/reference-rates> [https://perma.cc/XQJ2-DJX7]. In addition, LIBOR and other reference rates can help banks tailor consumer loans. A bank can make a steady rate lending to other banks, but lending to a consumer includes greater risks of default that need to be reflected in the contract. For example, a typical adjustable rate mortgage contains two relevant components: the index/reference rate, plus the “margin.” *Adjustable Rate Mortgages (ARM)*, U.S. DEP’T HOUS. & URB. DEV., https://www.hud.gov/program_offices/housing/sfh/ins/203arml [https://perma.cc/U4DK-52WN]. The reference rate is often LIBOR. See *How Many U.S. Mortgages Are Linked to LIBOR?*, FED. RSRV. BANK CLEV. (July 10, 2012), <https://www.clevelandfed.org/newsroom-and-events/publications/economic-trends/2012-economic-trends/et-20120710-how-many-us-mortgages-are-linked-to-libor.aspx> [https://perma.cc/Y5ED-JJKP]. The margin is added to the rate and reflects in part the relative risk of the consumer. Julia Kagan, *ARM Margin*, INVESTOPEDIA (Feb. 14, 2020), <https://www.investopedia.com/terms/a/armmargin.asp> [https://perma.cc/4W5W-YLVV]. Under this equation, the bank is guaranteed the base return it would receive if it lent the money to other banks, while the margin hypothetically helps to individualize the consumer loan to reflect the greater risk of the consumer.

Suppose Bank *A* has \$10,000 it could lend to Bank *B* or Consumer *C*. When LIBOR is set at 2%, it tells *A* it can lend the \$10,000 to *B* at roughly 2% interest with no collateral. If *C* is only willing to borrow money at 1% interest, *A* would make more money lending to *B* at 2%. But if *C* is willing to borrow at 3% or more, *A* may instead choose to lend to *C* to achieve higher profits. In effect, LIBOR gives Bank *A* a way of choosing the most efficient use of available capital.

LIBOR also provides long-term certainty to parties of financial contracts.²⁰ Some contracts feature fixed rates, meaning the interest rate will not change over the course of the agreement.²¹ But when a contract spans for more than a short period, uncertainty rises for both parties.²² If the market trends towards interest rates lower than the fixed rate, the lender benefits because they are making more than the current market rate.²³ If interest rates rise, the borrower benefits because they are locked into a lower rate.²⁴ As a result, many long-term financial contracts feature adjustable rates, with versions of LIBOR being the most commonly used reference rates.²⁵ For example, a contract might require the interest rate to be adjusted every three months to the current three-month U.S. dollar LIBOR rate. Under such an adjustable contract, the interest rate changes to reflect different economic conditions, giving neither the lender nor the borrower an unanticipated advantage.

LIBOR may be the most commonly used reference rate, but it is far from the only one.²⁶ A general consensus has emerged as to why

20. Neha Sinha, *Who Uses LIBOR Data and Why?*, INVESTOPEDIA (June 25, 2019), <https://www.investopedia.com/articles/investing/112014/who-uses-libor-data-and-why.asp> [https://perma.cc/8ARX-4RW9].

21. See Steven Symes, *Advantages & Disadvantages of a Fixed-Price Contract*, CHRON (Jan. 28, 2019), <https://smallbusiness.chron.com/advantages-disadvantages-fixedprice-contract-21066.html> [https://perma.cc/G8LB-QVQB].

22. See *id.*

23. See *id.*

24. See *id.*

25. *Reference Rate Reform*, GOVERNMENTAL ACCT. STANDARDS BD., <https://www.gasb.org/jsp/GASB/Page/GASBBridgePage&cid=1176173028734> [https://perma.cc/Z3QU-T28S].

26. See *infra* Part I.E for a discussion of other reference rates. Various private entities and central banks publish reference rates. See, e.g., James Chen, *Prime Rate*, INVESTOPEDIA (June 30, 2020), <https://www.investopedia.com/terms/p/primerate.asp> [https://perma.cc/QYW6-2Q2U]; *Consumer Price Index*, U.S. BUREAU OF LAB. STAT., <https://www.bls.gov/cpi> [https://perma.cc/A658-2RJC]. These rates measure a variety of economic conditions and have differing methodologies. When crafting an adjustable rate financial contract, the parties will typically choose the reference rate that they believe best mirrors the market in which the financial contract is sold.

LIBOR became such a behemoth. LIBOR was historically seen as the most reliable, simple, and reasonable estimate of the cost to lend money.²⁷ In addition, LIBOR's increasingly common usage led to a greater familiarity and comfort with the rate, leading to even more widespread use.²⁸ As a result, LIBOR became deeply entrenched in the world economy and remains the reference rate on an estimated \$350 trillion worth of financial contracts.²⁹

B. THE DEVELOPMENT OF LIBOR

LIBOR originated in 1969 on an informal basis for bankers looking to find a suitable interest rate in financial contracts.³⁰ A loose coalition would ask financial institutions for their estimated borrowing costs, then use those estimates to come up with an average rate.³¹ For a time the rate was mostly used for lending, and financial institutions had little incentive to manipulate their rates.³² However, financial institutions began to use LIBOR in more complex financial transactions, such as swaps and options.³³ This increased the volume of contracts referencing LIBOR while also increasing financial institutions' exposure to changes in LIBOR. The increased reliance led to concerns that banks might try to manipulate their lending rate submissions to benefit their bottom lines.³⁴ The rate was formalized in 1986 when the British Bankers Association (BBA), a private trade group, took over administration of the rate.³⁵ The formalized LIBOR is calculated in a manner similar to the original informal rate.³⁶

27. Sinha, *supra* note 20.

28. *Id.*

29. ICE POSITION PAPER, *supra* note 2.

30. David Hou & David Skeie, *LIBOR: Origins, Economics, Crisis, Scandal, and Reform* 1 (Fed. Rsrv. Bank of N.Y., Staff Reps., No. 667, 2014), https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr667.pdf [<https://perma.cc/K3AK-52G8>].

31. Kirstin Ridley & Huw Jones, *Insight: A Greek Banker, the Shah and the Birth of LIBOR*, REUTERS (Aug. 7, 2012, 8:15 PM), <https://www.reuters.com/article/us-banking-libor-change/insight-a-greek-banker-the-shah-and-the-birth-of-libor-idUSBRE87702320120808> [<https://perma.cc/MJQ9-TMPQ>].

32. *See id.*

33. *See id.*; *see also infra* Part II.C (discussing these types of financial contracts).

34. *See* Hou & Skeie, *supra* note 30; *see also infra* Part I.C.

35. *See* Ridley & Jones, *supra* note 31.

36. While some methodologies have changed over the years, the means of calculating LIBOR have remained fairly steady. *See, e.g.*, GREG KYLE & ALEX RUSSELL, LIBOR EXPLAINED (2012), https://www.batesgroup.com/publications/Libor_Explained.pdf [<https://perma.cc/M6LF-UA5W>] (discussing the expansion of LIBOR into new

For the purposes of this Note, it is helpful to understand LIBOR as it was traditionally calculated under the BBA regime.³⁷ First, BBA convened a panel of financial institutions and asked them to submit daily estimates of their interest rates on unsecured loans from other banks.³⁸ Notably, the number submitted by banks did not need to be based on readily identifiable data. The submission *could* be based off of data from recently borrowed funds.³⁹ But there was no hard requirement to use identifiable data, and banks without sufficient information on their borrowing costs could instead submit estimates based on “expert judgment.”⁴⁰ The question asked by the BBA reflected this uncertainty: “At what rate *could* you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11 am London time?”⁴¹ With little oversight by the BBA, banks with sufficient data could still rely heavily on “expert judgment.”⁴² This “expert judgement” feature of calculating LIBOR would later become a critical flaw as individuals and banks with an incentive to manipulate it used this leeway to their advantage.⁴³

The BBA then took the numbers submitted by panel banks to calculate an average. The banks’ submissions were ranked, with the highest and lowest twenty-five percent of submissions thrown out.⁴⁴ The remaining fifty percent of submissions were averaged to five decimal

currencies, the addition of new banks to BBA panels, and changes to the question asked of banks).

37. After international investigations into the LIBOR scandal, authority was transferred from the BBA to the Intercontinental Exchange (ICE). See INTERCONTINENTAL EXCH., ICE BENCHMARK ADMINISTRATION, REDACTED MINUTES (2014) [hereinafter ICE FEB. MINUTES], https://www.theice.com/publicdocs/Oversight_Committee_Minutes_20140210.pdf [https://perma.cc/9LC3-XE5H]. The current methods for calculating LIBOR are similar to the BBA regime.

38. See KYLE & RUSSELL, *supra* note 36, at 2.

39. See *id.* at 2–3.

40. See *id.*

41. Daniel Kurt, *How Is LIBOR Determined?*, INVESTOPEDIA (June 24, 2020), <https://www.investopedia.com/ask/answers/12/how-is-libor-determined.asp> [https://perma.cc/JT25-LTEN] (emphasis added).

42. See David Enrich & Max Colchester, *Before Scandal, Clash Over Control of LIBOR*, WALL ST. J. (Sept. 11, 2012), <https://www.wsj.com/articles/SB10000872396390443847404577631404235329424> [https://perma.cc/GDM6-66BW] (noting BBA’s external and internal concerns regarding their ability to regulate whether submissions were accurate).

43. See *infra* Part I.C.

44. KYLE & RUSSELL, *supra* note 36, at 2.

places and published daily.⁴⁵ This number constituted BBA's official LIBOR rate.

The banks serving on LIBOR panels were among the largest in the world.⁴⁶ Under the BBA regime, banks would voluntarily apply to serve on the panels.⁴⁷ A private committee, made up of banks on the existing panels, would determine whether to approve new membership.⁴⁸ Journalists and those seeking information on this process criticized it as "akin to a meeting of the five families" and "an information black hole."⁴⁹ The current LIBOR panel calculating U.S. dollar rates includes sixteen banks,⁵⁰ similar to historical participation.⁵¹

LIBOR comes in a number of shapes and forms. The rate is currently calculated in five currencies: U.S. dollar (USD), pound sterling (GBP), euro (EUR), Swiss franc (CHF), and Japanese yen (JPY).⁵² Those rates are published in seven different versions, known as "tenors," according to the duration of the loan: overnight, one-week, one-month, two-month, three-month, six-month, and twelve-month.⁵³ A panel bank would thus report seven different rates each day based on their loans for those time-frames. For example, if a bank took on an overnight loan (due the next morning) with an interest rate of 1% and a 3-month loan at an interest rate of 2%, they could report those numbers the next day as their submissions for overnight USD LIBOR and 3-month USD LIBOR.

In total, thirty-five versions of LIBOR are published (five currencies of seven tenors). Someone looking for the LIBOR rate on three-

45. Hou & Skeie, *supra* note 30.

46. *Compare US Dollar Panel*, BBA TRENT LTD (May 2012), <http://www.bbatrent.com/panels/usd> [<https://perma.cc/KGR5-GKE3>], with Francis Garrido & Saqib Chaudhry, *The World's 100 Largest Banks*, S&P GLOB.: MKT. INTEL. (Apr. 5, 2019), https://www.spglobal.com/marketintelligence/en/news-insights/trending/t-38wta5twjgrrqccf4_ca2 [<https://perma.cc/RWV9-PXED>].

47. WHEATLEY REV., *supra* note 9, § 5.20.

48. *Id.*

49. See LIAM VAUGHAN & GAVIN FINCH, *THE FIX: HOW BANKERS LIED, CHEATED AND COLLUDED TO RIG THE WORLD'S MOST IMPORTANT NUMBER* 51 (2017).

50. *ICE LIBOR*, *supra* note 4 (including Bank of America, Barclays, Citibank, Rabobank, Crédit Agricole, Credit Suisse, Deutsche Bank, HSBC, JPMorgan Chase, Lloyds, MUFG, National Westminster, Royal Bank of Canada, SMBC, Norinchukin, and UBS).

51. *Compare US Dollar Panel*, *supra* note 46, with *ICE LIBOR*, *supra* note 4.

52. See *ICE LIBOR*, *supra* note 4.

53. INTERCONTINENTAL EXCH., *ICE LIBOR METHODOLOGY*, https://www.theice.com/publicdocs/ICE_LIBOR_Methodology.pdf [<https://perma.cc/65QA-4T6Y>].

month loans in dollars would look for “USD LIBOR - 3 month.” Figure 1, below, shows one hypothetical daily calculation of LIBOR.⁵⁴

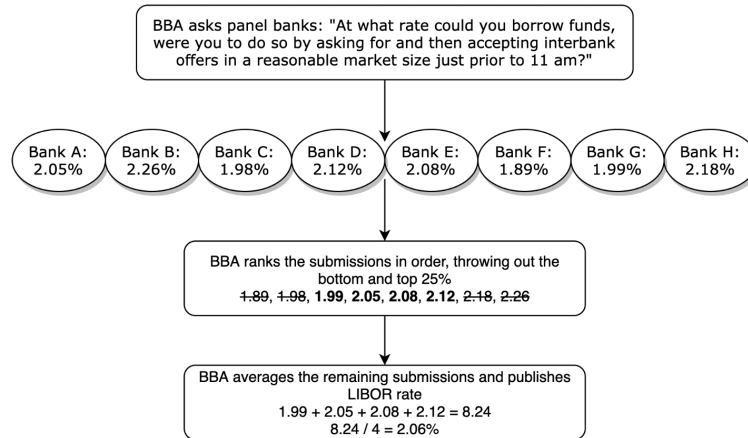


Figure 1

C. LIBOR'S FAILINGS AND WHAT TO LOOK FOR IN A NEW RATE

The global LIBOR scandal makes for interesting reading and research,⁵⁵ but for the purposes of this Note, only two issues are relevant. First, LIBOR's structural failings and susceptibility to manipulation will help guide an understanding of how the rate was unduly influenced. Second, the methods through which LIBOR was manipulated will inform the Note's later analysis for replacement rates to USD LIBOR in legacy financial contracts. Detailed below, LIBOR failed for four key reasons: (1) a lack of oversight from an independent organization administering the rate; (2) dependence on unreliable estimates and a dearth of actual transactions; (3) perverse incentives for market participants to manipulate the rate; and (4) ample opportunities to act on those incentives to influence submissions.

1. The LIBOR Universe

To understand LIBOR and the LIBOR scandal, it is important to know the players. There are three types of individuals generally

54. Figure 1 is purely illustrative and contains hypothetical data.

55. See generally VAUGHAN & FINCH, *supra* note 49 (reporting on the LIBOR scandal and Tom Hayes's role in the scandal); DAVID ENRICH, *THE SPIDER NETWORK: THE WILD STORY OF A MATH GENIUS, A GANG OF BACKSTABBING BANKERS, AND ONE OF THE GREATEST SCAMS IN FINANCIAL HISTORY* (2017) (recounting the multitude of players connected to Tom Hayes during the LIBOR scandal).

involved in the LIBOR process: submitters, traders, and brokers. Submitters are individuals at panel banks responsible for submitting daily LIBOR numbers.⁵⁶ Typically, these individuals serve at a bank's "cash desk" and supposedly base their submission numbers off of the department's activity in lending and borrowing cash from other banks.⁵⁷ When data is insufficient for perceived borrowing costs, the submitters should comb through independent data and come up with a reasonable estimate.⁵⁸ Traders work at these same banks, purchasing and selling various financial contracts to other traders.⁵⁹ Brokers are intermediaries, typically at a separate firm.⁶⁰ They connect two traders interested in buying and selling the same type of financial contract.⁶¹ While each position interacts with LIBOR, an ideal system would allow brokers and traders to work with each other but wall them off from submitters. The independent submissions would form an accurate rate to estimate what it costs for banks to lend money to one another.

2. LIBOR's Structural Failings Led to Manipulation

The first step in analyzing the LIBOR scandal is examining the rate's structural failings and potential for manipulation. The four issues detailed below systematically led to an untenable level of risk.

i. *Lack of Proper Oversight*

The BBA oversaw LIBOR with its formalization in 1986.⁶² The BBA was an unregulated private trade association who lobbied on behalf of its member banks.⁶³ As LIBOR became a ubiquitous reference rate in hundreds of trillions of dollars' worth of financial contracts, it fell to the relatively small BBA to supervise the rate and the accuracy of its own members' submissions.⁶⁴ BBA's own understanding of LIBOR was tenuous as its popularity exploded; at one point, the

56. INTERCONTINENTAL EXCH., ICE BENCHMARK ADMINISTRATION: LIBOR CODE OF CONDUCT 6 (2018) [hereinafter LIBOR CODE OF CONDUCT].

57. See VAUGHAN & FINCH, *supra* note 49, at 26.

58. See *id.* at 53.

59. See LIBOR CODE OF CONDUCT, *supra* note 56, at 16 ("Submitters shall work in locations physically separated from interest rate derivatives traders.").

60. See Philip Stafford, *Q&A: Interdealer Brokers*, FIN. TIMES (Sept. 25, 2013), <https://www.ft.com/content/038943a6-25bb-11e3-8ef6-00144feab7de>.

61. *Id.*

62. See Ridley & Jones, *supra* note 31.

63. Enrich & Colchester, *supra* note 42.

64. *Id.* ("[T]he BBA has a staff of about 70 and represents more than 200 banks, from 60 countries, doing business in the U.K.").

definition for “LIBOR” on BBA’s website was described as “ambiguous to say the least.”⁶⁵ Even after BBA started receiving information that member banks were being untruthful in their submissions, senior leaders continued to present the rate as stable and failed to reform their practices.⁶⁶ As regulators like the United States Commodity Futures Trading Commission began to see problems with LIBOR, the BBA stalled in responding to investigations, which ensnared their member banks in criminal and civil liability.⁶⁷ Later reports on LIBOR’s failings would point to the BBA’s administration of the rate as an example of how not to administer a reference rate, instead leading to recommendations of creating “a clear distinction between the interests of institutions and submitting banks” and “specific oversight processes.”⁶⁸

ii. Lack of Actual Data Following the 2008 Financial Crisis Hampered Submitters

Another questionable aspect of LIBOR was its dependence on unreliable data. The BBA did not ask panel banks for exact data on unsecured interbank lending; instead, it asked for a hypothetical figure based upon “expert analysis” which might or might not be backed by an actual rate.⁶⁹ But even if submitters wanted to provide accurate unsecured loan figures, banks ceased to have reliable data on these loans post-2008. In the aftermath of the 2008 financial crisis, lending between banks plummeted.⁷⁰ Even when banks lent money to one another, they increasingly required collateral because they found other

65. ENRICH, *supra* note 55, at 207.

66. *See id.* at 193–94 (describing how BBA’s CEO received confirmation that member banks were submitting bogus rates and urging them to walk back public comments confirming it).

67. *See id.* at 205–06.

68. WHEATLEY REV., *supra* note 9, § 3.12.

69. *See supra* notes 39–42 and accompanying text.

70. Andrew Bailey, Chief Exec., Fin. Conduct Auth., The Future of LIBOR (July 27, 2017) [hereinafter Bailey Speech], <https://www.fca.org.uk/news/speeches/the-future-of-libor> [<https://perma.cc/E7DC-UA3D>] (“The absence of active underlying markets raises a serious question about the sustainability of the LIBOR benchmarks that are based upon these markets.”); VAUGHAN & FINCH, *supra* note 49, at 40 (“Banks had stopped lending to each other for periods of longer than a few days, preferring to stockpile their cash. After Bear Stearns there was no guarantee they would get it back.”).

banks' promises to repay insufficient.⁷¹ Since LIBOR only measured unsecured lending between banks, such secured transactions did not fulfill the rate's requirements. Submitters who had previously been able to rely on hard numbers were now flying blind.⁷²

This change in accessible data forced submitters to either look to outside sources for a reliable estimate or simply guess. This method stood in stark contrast to the hard data required by other reference rates.⁷³ Indeed, many market participants have moved towards preferring "risk-free" reference rates "underpinned by transactional data."⁷⁴

iii. Pressure from Traders Looking To Gain a Financial Edge in the Market

Tom Hayes, the most notorious trader at the center of the LIBOR scandal, provides insight into the motivations behind the rate's manipulation. Hayes worked at one of the largest investment banks in the world, Switzerland's UBS.⁷⁵ Unlike a traditional community bank primarily dealing in deposits and lending, large investment banks serve governments, corporations, and other major entities with asset

71. Randolph Walerius, *CFTC's Gensler Says Financial Contracts Need To Move to New Interest Rate Benchmark*, CQ ROLL CALL: WASH. SEC. ENF'T & LITIG. BRIEFING (Feb. 28, 2013), 2013 WL 722323.

72. Bailey Speech, *supra* note 70 ("[P]anel banks feel understandable discomfort about providing submissions based on judgements with so little actual borrowing activity against which to validate those judgements.").

73. For example, the Prime Rate is the interest rate charged by banks to the most reliable customers and is used as a reference rate in many consumer loans. *Wall Street Journal Prime Rate*, BANKRATE, <https://www.bankrate.com/rates/interest-rates/wall-street-prime-rate> [<https://perma.cc/3YQR-MUJF>]. The most commonly used source for the Prime Rate is the *Wall Street Journal*, which regularly polls the largest financial institutions to ask them for *actual* data, not perceived lending costs. *See id.*

74. *See* KPMG, MOVING TO NEW RISK-FREE RATES 3 (2019), <https://assets.kpmg/content/dam/kpmg/ca/pdf/2019/02/moving-to-new-risk-free-rates-en.pdf> [<https://perma.cc/4JF-R8TB>]. "Risk-free rates" are generally defined as reference rates backed by solid transactional data, such that it would be difficult to manipulate the inputs required to generate a rate. *See* FIN. STABILITY BD., MARKET PARTICIPANTS GROUP ON REFORMING INTEREST RATE BENCHMARKS: FINAL REPORT 169 (2014), https://www.fsb.org/wp-content/uploads/r_140722b.pdf [<https://perma.cc/WVG3-3FUA>].

75. Liam Vaughan & Gavin Finch, *LIBOR Scandal: The Bankers Who Fixed the World's Most Important Number*, GUARDIAN (Jan. 18, 2017, 12:00 AM), <https://www.theguardian.com/business/2017/jan/18/libor-scandal-the-bankers-who-fixed-the-worlds-most-important-number> [<https://perma.cc/GFU9-V2KY>]; *Bulge Bracket Investment Banks*, CORP. FIN. INST., <https://corporatefinanceinstitute.com/resources/careers/companies/bulge-bracket-investment-banks-list> [<https://perma.cc/4B2Y-DB5N>].

management, advisory, and underwriting services, economic research, sales and trading of various financial services, and more.⁷⁶ This diversity of work has a major effect; UBS alone has \$972 billion in assets⁷⁷ with an operating income of \$6.2 billion.⁷⁸

Hayes worked almost exclusively with financial contracts known as “interest-rate swaps.”⁷⁹ Interest-rate swaps generally involve two parties trading interest payments on a loan, where either one or both interest rates are based upon some form of LIBOR.⁸⁰ Many of these trades are highly speculative; Hayes based his decisions on predictions as to where the market would trend.⁸¹ Hayes sometimes had tens of millions of dollars of investments outstanding in swaps and derivatives, with many based on LIBOR.⁸²

The incentive to even slightly manipulate LIBOR became higher as a trader’s portfolio increased. Hayes and other traders came to realize small swings in LIBOR could make a major impact when added up as part of their massive holdings.⁸³ Traders like Hayes had built computer models to tell them how much a one basis point (a one-hundredth of a percent)⁸⁴ change in LIBOR would affect their bottom line.⁸⁵ At some moments in Hayes’s career, a change of only one basis point could cause his portfolio of contracts to gain or lose \$750,000.⁸⁶

In the high-stakes and money-driven world of financial traders where profit is the sole motive, any opportunity to gain an edge is seized upon.⁸⁷ He eventually worked with submitters in his own

76. See *Bulge Bracket Investment Banks*, *supra* note 75.

77. See *UBS Group Total Assets (Quarterly)*, YCHARTS, <https://ycharts.com/companies/UBS/assets> [<https://perma.cc/5FCJ-SVL5>] (providing December 31, 2019, quarterly asset report data).

78. See *UBS Group AG*, WALL ST. J.: MKTS., <https://www.wsj.com/market-data/quotes/UBS/financials/annual/income-statement> [<https://perma.cc/72PX-64UB>] (noting 2018 UBS operating income).

79. ENRICH, *supra* note 55, at 35.

80. James Chen, *Swap*, INVESTOPEDIA (Feb. 4, 2020), <https://www.investopedia.com/terms/s/swap.asp> [<https://perma.cc/4ZMG-ZYVV>]. See *infra* Part II.C.1 for a more detailed description of interest rate swaps.

81. ENRICH, *supra* note 55, at 35.

82. *Id.* at 166.

83. See *id.* at 93–94.

84. See Vaughan & Finch, *supra* note 75 (“LIBOR moves in increments called basis points, equal to one one-hundredth of a percentage point, and every tick was worth roughly \$750,000 to his bottom line.”).

85. See VAUGHAN & FINCH, *supra* note 49, at 23.

86. *Id.*

87. See *id.* (“Ask any trader worth his salt and he’ll be able to give [their profit or loss] to you to the nearest \$1,000.”).

bank⁸⁸ and other banks⁸⁹ to influence multiple submissions of LIBOR. Hayes was not the only trader to manipulate LIBOR for financial gain.⁹⁰ And while there is some disagreement over whether Hayes's efforts actually resulted in rates being manipulated,⁹¹ analysts generally contend Hayes and other traders were successful at some points in manipulating the rate. At minimum, they tarnished its veneer of independence.

iv. Perverse Incentives for Brokers To Manipulate Their Relationships with Submitters

Brokers link traders like Hayes with other traders looking to enter into financial contracts. But broker payments created a system of perverse incentives. Brokers earn money on commissions from each trade, putting them at the mercy of traders who decide whether to use their services.⁹² A trader like Hayes, who commanded a massive portfolio, could put pressure on brokers to use their contacts with submitters to manipulate LIBOR. Indeed, this is exactly what Hayes did.⁹³ The

88. While Hayes worked in the trading division of UBS, he was not completely separated from the LIBOR submitters. ENRICH, *supra* note 55, at 93–94. Over time, Hayes developed relationships with LIBOR submitters within UBS and often provided suggestions on where he wanted LIBOR moved based on whether a higher or lower rate would benefit his current holdings. *Id.* These “suggestions” were sometimes more overt, one time asking a UBS LIBOR submitter to “do him a favor and lift UBS’s yen Libor submission as high as possible that day.” *Id.* at 101.

89. In one instance, Hayes directly spoke with a trader at Deutsche Bank, another major investment bank, and came to an agreement that they would influence their LIBOR submitters to lower the rate temporarily. *Id.* at 234 (“[Hayes] had a huge set of trades dependent on Libor rising in mid-July and then falling afterward, and he acted accordingly He suggested [the Deutsche Bank trader and Hayes] act together to lift their submissions over the next two weeks, and then lower them later, to suit both of their interests.”).

90. See, e.g., Press Release, Dep’t of Just., Two Former Deutsche Bank Traders Convicted for Role in Scheme to Manipulate a Critical Global Benchmark Interest Rate (Oct. 17, 2018), <https://www.justice.gov/opa/pr/two-former-deutsche-bank-traders-convicted-role-scheme-manipulate-critical-global-benchmark> [<https://perma.cc/F783-MX6R>].

91. ENRICH, *supra* note 55, at 351 (“Read argued that it was virtually impossible that ICAP had any sway over banks’ Libor submissions. ‘We can’t influence that. What we can do is try and take the credit for stuff.’”).

92. See Stafford, *supra* note 60.

93. Press Release, Commodity Futures Trading Comm’n, CFTC Charges RP Martin Holdings Limited and Its Subsidiary, Martin Brokers (UK) Limited, with Manipulation and Attempted Manipulation of Yen LIBOR (May 15, 2014) [hereinafter CFTC Press Release], <https://www.cftc.gov/PressRoom/PressReleases/6930-14> [<https://perma.cc/D4CP-M35B>].

brokers engaged in the manipulation would take suggestions from their most profitable clients and either directly or indirectly share those suggestions with other traders, brokers, or submitters.⁹⁴

One broker in particular, Collin Goodman, had an outsized influence on LIBOR submissions. Goodman was a broker at ICAP, a global brokerage firm. Each day, Goodman would send out “the run-thru,” a mass email predicting where LIBOR rates would end up.⁹⁵ Investigative reporters found this daily email to be wildly influential. As many as thirteen out of sixteen panel bank submitters received the daily email,⁹⁶ and the data shows many submitters would plug in the same numbers as the run-thru for weeks at a time.⁹⁷ At the height of his scheme, Hayes focused much of his energy on using his broker connections to influence Goodman, thereby indirectly, yet powerfully, influencing the LIBOR submitters.⁹⁸

But why would submitters listen to brokers? Brokers had the best information on the rates traders and banks were seeking.⁹⁹ When submitters lacked the actual data needed for LIBOR, they would often take the advice of brokers who seemingly had a finger on the pulse of

94. ENRICH, *supra* note 55, at 213 (“Day after day, week after week, Farr and his colleagues planted Hayes’s Libor-moving requests with a small cluster of interest-rate traders around London. It wasn’t hard; all Farr had to do was drop it into conversations he was supposed to be having anyway.”); see Press Release, Fin. Conduct Auth., Martin Brokers (UK) Limited Fined £630,000 for Significant Failings in Relation to LIBOR (Mar. 22, 2016), <https://www.fca.org.uk/news/press-releases/martin-brokers-uk-limited-fined-£630000-significant-failings-relation-libor> [<https://perma.cc/YXE3-HG2F>]. Many of the brokers embroiled in the scandal maintain that they did not illegally influence LIBOR. Chad Bray, *5 Ex-Brokers Cleared in London LIBOR Trial*, N.Y. TIMES (Jan. 27, 2016), <https://www.nytimes.com/2016/01/28/business/dealbook/libor-trial-london-traders-cleared.html> [<https://perma.cc/2XQ2-E6H8>]. Brokers connected to Hayes also alleged they told him they were influencing rates on his behalf, when in reality they did nothing to carry out his demands. VAUGHAN & FINCH, *supra* note 49, at 351 (“We can’t influence that. What we can do is try and take the credit for stuff.”).

95. VAUGHAN & FINCH, *supra* note 49, at 29.

96. *Id.*

97. *Id.* at 62.

98. See *id.* at 29; ENRICH, *supra* note 55, at 211 (“[Hayes’s broker] apologized for constantly interrupting Goodman’s early-morning train rides with Libor requests. As a postscript, he told Goodman where Hayes wanted Libor to move over the next few weeks: ‘Nudge nudge!’”). Regardless of Hayes’s success in manipulating Goodman, brokers clearly had a role in influencing daily LIBOR submissions, further discrediting the benchmark’s independent reputation.

99. See Stafford, *supra* note 60 (“A broker will typically have several screens of data on his desk plus more information coming through on a telephone as well as an internet-based chatroom or instant messaging system . . .”).

market trends.¹⁰⁰ Brokers could give submitters pure market information, but business pressures from traders like Hayes created a perverse incentive to suggest rates favorable to their customers.¹⁰¹ And for submitters, oftentimes listening to brokers' advice was their only option post-2008, other than simply making up their daily estimated rate.¹⁰²

What was supposed to be an independent submission system turned into one where submitters relied on brokers, who relied on traders, who manipulated LIBOR to boost their bottom line. While the LIBOR system was set up to create independence among LIBOR submitters and provide reliable estimates of unsecured interbank lending, structural failures and interference from both traders and brokers led to a manipulation of those rates.

D. THE DECISION TO DISCONTINUE LIBOR

International investigations into LIBOR manipulation led to a number of reports, many of which laid out potential paths forward for the troubled rate. The most comprehensive and influential report, The Wheatley Review, was undertaken at the request of the British government.¹⁰³ The Review laid out a case to retain LIBOR, arguing a new administration with updated guidelines could save LIBOR as an effective reference rate.¹⁰⁴ First, the Review recommended BBA transfer administration of LIBOR to another private participant with oversight from regulatory bodies.¹⁰⁵ The Review then laid out proposed guidelines for LIBOR submissions, all intended to ensure accuracy and prevent manipulation of the rate.¹⁰⁶ Next, the Review proposed various ways to encourage broad participation among banks that submit LIBOR data to ensure an accurate benchmark.¹⁰⁷ Finally, it argued LIBOR should not be replaced completely, referencing the "risk [to] the substantial stock of outstanding contracts that reference LIBOR."¹⁰⁸ The Review urged market participants to consider using different

100. See, e.g., VAUGHAN & FINCH, *supra* note 49, at 26.

101. See generally CFTC Press Release, *supra* note 93 (outlining a number of instances where brokers asked for favors due to their relationships to Hayes).

102. See *supra* notes 57–58 and accompanying text.

103. See WHEATLEY REV., *supra* note 9, at 3.

104. *Id.* at 1.11.

105. *Id.* at 3.5–.12.

106. See generally *id.* at 4.1–.31.

107. See *id.* at 5.A.

108. *Id.* at 6.5.

rates if LIBOR was not perfectly suited to the transaction at hand.¹⁰⁹ International response to The Review was muted, but major industry trade organizations were generally supportive of the recommendation that LIBOR be continued.¹¹⁰

A number of other reports have suggested various reforms.¹¹¹ The Bank for International Settlements released a 2014 report suggesting governments and central banks take a more active role in ensuring reference rate integrity and promoting a range of reference rates to be used by financial actors.¹¹² The Financial Stability Board took a similar approach, focusing on retaining LIBOR while suggesting moving towards a broader range of reference rates.¹¹³

Despite the comprehensive plans to reform LIBOR, market confidence waned and its future remained perilous.¹¹⁴ LIBOR always relied on the voluntary cooperation of financial institutions to submit daily reports, and the increased legal scrutiny over submissions reduced the incentives for banks to submit their data.¹¹⁵ With questions swirling over the benchmark's future, a top regulator in the British government announced LIBOR's future discontinuation.¹¹⁶ U.K. authorities reached an agreement with panel banks where they will continue submitting LIBOR data until the end of 2021, which has since been extended to mid-2023 for the most-used USD LIBOR tenors.¹¹⁷ After 2023 ends, there is no guarantee LIBOR will continue to be published,

109. *Id.* at 6.6.

110. Letter from the Int'l Swaps & Derivatives Ass'n Inc. to the Wheatley Rev. (Sept. 7, 2012), <https://www.isda.org/a/HwiDE/response-to-wheatley-review-09-07-2012.pdf> [<https://perma.cc/4VSV-9Q2Y>].

111. For a comprehensive review of reference rate reforms, see generally Hou & Skeie, *supra* note 30, at 10–15.

112. See BANK FOR INT'L SETTLEMENTS, TOWARDS BETTER REFERENCE RATE PRACTICES: A CENTRAL BANK PERSPECTIVE 1–2 (2013), <https://www.bis.org/publ/othp19.pdf> [<https://perma.cc/TB8M-LC3B>].

113. See FIN. STABILITY BD., REFORMING MAJOR INTEREST RATE BENCHMARKS 1–3 (2014), https://www.fsb.org/wp-content/uploads/r_140722.pdf [<https://perma.cc/VST6-E8AE>].

114. See Bailey Speech, *supra* note 70.

115. See *id.*

116. See *id.*

117. FCA Statement on LIBOR Panels, FIN. CONDUCT AUTH. (Nov. 24, 2017), <https://www.fca.org.uk/news/statements/fca-statement-libor-panels> [<https://perma.cc/2Y4S-USQ6>]; Howard et al., *supra* note 5. Authority over LIBOR was transferred from BBA to another entity, Intercontinental Exchange (ICE) on February 1, 2014. See ICE FEB. MINUTES, *supra* note 37, at 1.

and most market participants expect it to die out soon after.¹¹⁸ Banks appear highly unlikely to publish LIBOR rates after their agreement ends, and they have already indicated major concerns with the continued publishing of rates.¹¹⁹

E. ARE THERE BENCHMARKS OTHER THAN LIBOR?

Despite the discontinuation of LIBOR, lenders still need reference rates for financial contracts. While LIBOR was the most commonly used reference rate, it was far from the only one, and a number of new rates have been created in response to LIBOR's demise. Although this Note only deals with legacy contract issues in the USD LIBOR market, it will be helpful to survey both USD and other currency replacements for an analysis of the best replacement rates.

1. Potential USD LIBOR Replacement Rates

There are a number of potential USD replacement rates available upon LIBOR's discontinuation. Each has unique characteristics important in determining which rate(s) should replace USD LIBOR in legacy financial contracts. Differences include: the market on which the rate is based; the organization overseeing the rate; the availability of tenors; the volume of trading underlying the rate; and the similarity of the rate to USD LIBOR's historical market trends.

i. Secured Overnight Financing Rate (SOFR)

The Federal Reserve Bank of New York (New York Fed) recently introduced a reference rate¹²⁰ intended to replace USD LIBOR.¹²¹

118. Bailey Speech, *supra* note 70. The COVID-19 pandemic has not changed this timeline. See *Impact of The Coronavirus on Firms' LIBOR Transition Plans*, FIN. CONDUCT AUTH. (Mar. 25, 2020), <https://www.fca.org.uk/news/statements/impact-coronavirus-firms-libor-transition-plans> [<https://perma.cc/TY5V-2GWS>].

119. Eugene Costello, *FCA: 'Banks to Support LIBOR Reluctantly Until 2021'*, INT'L INV. (Nov. 24, 2017), <https://www.internationalinvestment.net/internationalinvestment/news/3502167/fca-%E2%80%98banks-support-libor-reluctantly-2021%E2%80%99> [<https://perma.cc/K9UW-A294>] (“[Banks] feel understandable discomfort about providing submissions based on judgments with so little actual borrowing activity against which to validate those judgments.” (quoting FCA's chief executive, Andrew Bailey)).

120. *Secured Overnight Financing Rate Data*, FED. RSRV. BANK N.Y. [hereinafter *SOFR*], <https://apps.newyorkfed.org/markets/autorates/sofr> [<https://perma.cc/G3BJ-MWLE>].

121. Press Release, Alt. Reference Rates Comm., The ARRC Selects a Broad Repo Rate as its Preferred Alternative Reference Rate (July 22, 2017), <https://www.newyorkfed.org/medialibrary/microsites/arrc/files/2017/ARRC-press-release-Jun>

Dubbed the Secured Overnight Financing Rate (SOFR), it measures the cost of lending on the “repo market.”¹²² Simply put, the repo market is where various financial actors provide cash to another institution overnight. When the contract ends (at the beginning of the next business day),¹²³ the cash is returned plus some interest. That interest is what SOFR measures.

There are some key structural differences between LIBOR and SOFR. First, while LIBOR only measured borrowing rates between banks, SOFR includes lending between banks and other entities like hedge funds, money market funds, and more.¹²⁴ Second, SOFR is based on “secured loans.”¹²⁵ In contrast to LIBOR, secured loans require borrowers to put up some additional asset as a collateral for the loan.¹²⁶ Lenders therefore have more certainty (and less risk) on repayment of secured loans and can charge lower rates than unsecured loans.

Another critical difference between LIBOR and SOFR is the use of tenors. LIBOR is produced in a number of tenors: overnight, one-week, one-month, two-month, three-month, six-month, and twelve-month.¹²⁷ SOFR only measures an overnight rate; the New York Fed publishes a single number showing what it would cost a bank to borrow secured money overnight, with an obligation to pay by the beginning of the next business day.¹²⁸ This difference creates one big problem if SOFR is to replace LIBOR: most financial contracts reference either one-month, three-month, or six-month USD LIBOR. Almost none use the overnight tenor.¹²⁹

Simply replacing all USD LIBOR contracts with one overnight rate, regardless of tenor, would be the bluntest of methods. The Alternative Reference Rates Committee (ARRC) was chosen “by the Federal Reserve Board and the New York Fed to ensure a successful post-

-22-2017.pdf [<https://perma.cc/YG3J-2ABY>].

122. See *SOFR*, *supra* note 120.

123. See Andreas Schrimpf & Vladyslav Sushko, *Beyond LIBOR: A Primer on the New Reference Rates*, BIS Q. REV., Mar. 2019, at 29, 39.

124. *Id.* at 35.

125. More specifically, SOFR only measures loans collateralized by Treasury securities. *SOFR*, *supra* note 120.

126. See Schrimpf & Sushko, *supra* note 123. In the case of default on a secured loan, the borrower could lose the assets that he or she established as collateral.

127. See INTERCONTINENTAL EXCH., *supra* note 53 and accompanying text.

128. See *SOFR*, *supra* note 120.

129. See FIN. STABILITY BD., *supra* note 74, at 243 (showing a table of frequently used USD LIBOR tenors with various types of financial contracts).

LIBOR transition.”¹³⁰ ARRC considered a variety of methods for computing similar SOFR tenors.¹³¹ The Committee eventually chose to use a compounded average of previous daily SOFR rates to come up with various tenors.¹³² Publication of 30-day, 90-day, and 180-day rates began on March 2, 2020.¹³³ The New York Fed may publish SOFR rates for the other three tenors (one-week, two-month, and twelve-month) in the future. However, the formula used would allow market participants to calculate their rate without an official published rate if necessary.¹³⁴

SOFR and LIBOR may generally keep pace with each other over time, but they are not the same rate.¹³⁵ Swapping LIBOR for SOFR would result in a different interest rate over time because the two rates measure different transactions. To adjust for this problem in legacy contracts, ARRC has proposed introducing a “spread adjustment” for contracts in which SOFR replaces LIBOR.¹³⁶ This adjustment would use historical rates for SOFR and LIBOR to come up with a “spread” for the difference between the two.¹³⁷ In sum, the new rate would aim

130. Alt. Reference Rates Comm., *About*, FED. RSRV. BANK N.Y., <https://www.newyorkfed.org/arrc> [<https://perma.cc/WU2R-RSFK>].

131. See ALT. REFERENCE RATES COMM., SECOND REPORT 20–24 (2018), <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2018/ARRC-Second-report> [<https://perma.cc/P9LG-YLZS>].

132. *Statement Regarding Publication of SOFR Averages and a SOFR Index*, FED. RSRV. BANK N.Y. (Feb. 12, 2020) [hereinafter *SOFR Operating Policy*], https://www.newyorkfed.org/markets/opolicy/operating_policy_200212 [<https://perma.cc/ME4B-ZCUM>] (laying out the formula through which SOFR averages will be calculated).

133. Press Release, Alt. Reference Rates Comm., ARRC Chair Tom Wipf Welcomes the Publication of SOFR Averages and a SOFR Index (Mar. 2, 2020), https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Press_Release_on_Avgs_Index.pdf [<https://perma.cc/YND2-JEXF>].

134. *SOFR Operating Policy*, *supra* note 132 (“We note that the SOFR Index will allow for the derivation of calendar month-based rates—or any custom period such as 360-day or 1-year tenors—using any two business dates.”).

135. See Figure 2; see also Michael Held, Exec. Vice President & Gen. Couns., Fed. Rsr. Bank of N.Y., *SOFR and the Transition from LIBOR* (Feb. 26, 2019), <https://www.newyorkfed.org/newsevents/speeches/2019/hel190226> [<https://perma.cc/9FB8-BFA6>] (“There are inherent differences between SOFR and LIBOR that will need to be adjusted for in the transition.”).

136. See Press Release, Alt. Reference Rates Comm., RFP for Vendor To Publish ARRC-Recommended LIBOR Fallback Spread Adjustments and Spread-Adjusted Rates (Sept. 2, 2020), <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/20200902-ARRC-RFP-Spread-Adjustment-Publication-FINAL> [<https://perma.cc/JHQ7-RADQ>].

137. See *id.*

to roughly mirror what LIBOR would have been had it not been discontinued.

SOFR appears to be the most relevant reference rate when discussing a broad USD LIBOR “replacement.” ARRC has recommended SOFR to replace USD LIBOR in most instances.¹³⁸ New York is considered the top financial center of the world, and a plurality of financial contracts are conducted in U.S. dollars.¹³⁹ As such, SOFR’s ties to the New York Fed and U.S. dollar, along with a push by ARRC, make it arguably the most powerful alternative to USD LIBOR.

SOFR has its share of proponents and detractors.¹⁴⁰ Most importantly, SOFR fixes some of the problems inherent in LIBOR. First, the rate is risk-free because it is based on transactional data and not mere “expert judgment.” SOFR also has oversight by a semi-public institution, the New York Fed.¹⁴¹ The rate has a relatively high volume of trading data underpinning the rate, unlike USD LIBOR following the

138. Alt. Reference Rates Comm., *supra* note 121.

139. See David Reid, *New York Stretches Lead Over London as the World’s Top Financial Center, Survey Shows*, CNBC (Sept. 19, 2019), <https://www.cnbc.com/2019/09/19/new-york-beats-london-again-as-the-worlds-top-financial-center.html> [<https://perma.cc/6XB4-MJCD>]; Ben Mabley & Henrik Wijkander, *Discontinuation of LIBOR and What This Means for Insurers*, INST. & FAC. ACTUARIES, <https://www.actuaries.org.uk/system/files/field/document/P3.%20Discontinuation%20of%20LIBOR%20and%20what%20this%20means%20for%20insurers.pdf> [<https://perma.cc/LGD8-AREW>] (noting the breakdown of IBOR exposures by currency).

140. See, e.g., Letter from R. Christopher Marshall, David C. Lindenauer, James C. Leonard, John C. Trohan, M. Deron Smithy, Thomas A. Feil, James J. Herzog, Scott Warman, Randall C. King & Matthew Tyler to Randal K. Quarles, Vice Chairman of Supervision, Bd. of Governors of the Fed. Rsrv., Jelena McWilliams, Chair, Fed. Deposit Ins. Corp. & Joseph Otting, Comptroller of the Currency, Off. of the Comptroller of the Currency (Sept. 23, 2019), <https://www.politico.com/f/?id=0000016d-d15d-d0d8-af6d-f77d6c5f0001> [<https://perma.cc/KM8J-RUTA>] (“However, we believe that SOFR, on a stand-alone basis, is not well suited to be a benchmark for lending products and have concerns that this transition will adversely affect credit availability.”).

141. The New York Fed’s status as a “public” entity is not entirely settled. It considers itself a “federal instrumentality.” See Memorandum of Law in Support of Defendant’s Motion for Reconsideration at 4, *James v. Fed. Rsrv. Bank of N.Y.*, 471 F. Supp. 2d 226 (E.D.N.Y. 2007) (No. CV 01-1106), 2005 WL 2892582. Some federal circuits have agreed in cases involving other Federal Reserve banks. See, e.g., *Fed. Rsrv. Bank of Bos. v. Comm’r of Corps. & Tax’n*, 499 F.2d 60, 62 (1st Cir. 1974) (“Plainly [federal reserve banks] are [instrumentalities].”); *Fed. Rsrv. Bank of St. Louis v. Metrocentre Imp. Dist. No. 1*, Little Rock, 657 F.2d 183 (8th Cir. 1981) (finding Federal Reserve banks to be federal instrumentalities for taxation purposes). But see *Lewis v. United States*, 680 F.2d 1239 (9th Cir. 1982) (finding Federal Reserve banks to be “privately owned and locally controlled corporations,” not federal instrumentalities, for the purposes of the Federal Tort Claims Act). For the purposes of this Note, the New York Fed will be considered “semi-public” or “public/private.”

2008 financial crisis.¹⁴² The repo market is unlikely to collapse like the unsecured interbank lending market, leaving SOFR likely to continue to be based on a diversity of transactional data in the future. In addition, SOFR generally follows USD LIBOR's trends over time.¹⁴³ Critics point to structural differences between SOFR and LIBOR as problematic. Top concerns include switching from an unsecured rate to a secured rate¹⁴⁴ and the lack of true tenors other than an overnight rate.¹⁴⁵ Critics also argue SOFR is not an accurate representation for bank funding costs,¹⁴⁶ is subject to volatile spikes,¹⁴⁷ lacks a yield curve,¹⁴⁸ and continues the problem of basing the majority of financial contracts off of one rate.¹⁴⁹

ii. *Overnight Bank Funding Rate (OBFR)*

The Overnight Bank Funding Rate (OBFR) measures overnight unsecured bank borrowing costs.¹⁵⁰ Its market includes interbank lending, bank borrowing from government-sponsored enterprises,

142. See *SOFR*, *supra* note 120 (showing daily estimated volume of \$898 billion as of August 27, 2020).

143. See Figure 2. For additional information on historical USD LIBOR rates versus SOFR rates, go to <https://fred.stlouisfed.org> and create a data series based on USD LIBOR Overnight and add SOFR as a line.

144. Matt Levine, *LIBOR's Replacement Is a Little Too Real*, BLOOMBERG: OP. (Feb. 13, 2019, 6:00 AM), <https://www.bloomberg.com/opinion/articles/2019-02-13/libor-s-replacement-sofr-is-a-little-too-real> [<https://perma.cc/E6H9-H6E5>].

145. *LIBOR Transition Progresses but the Biggest Hurdles Remain*, FITCH: FITCH WIRE (June 26, 2020, 7:11 AM), <https://www.fitchratings.com/research/banks/libor-transition-progresses-the-biggest-hurdles-remain-26-06-2020> [<https://perma.cc/G8BL-ETTH>].

146. See Ronald Scheinberg, *SOFR, The New LIBOR? A Critique of SOFR and the USD LIBOR Replacement Process*, 136 BANKING L.J. 452, 455–57 (2019).

147. John Crabb, *SOFR Weaknesses Show Need for Multiple Replacement Rates*, INT'L FIN. L. REV.: PRAC. INSIGHT (Dec. 12, 2019), <https://iflinsight.com/articles/426/sofr-weaknesses-show-need-for-multiple-replacement-rates> [<https://perma.cc/9249-TD7A>].

148. *Id.* A yield curve charts interest rates for similar types of bonds with similar quality but different maturities. Investors like a yield curve because it provides them with more accurate data to tailor to financial contracts of differing maturities. James Chen, *Yield Curve*, INVESTOPEDIA (Feb. 25, 2020), <https://www.investopedia.com/terms/y/yieldcurve.asp> [<https://perma.cc/69B8-TBYZ>].

149. Crabb, *supra* note 147 ("We need a portfolio of choices and the markets will sort out how many there should be" (quoting Richard Sandor, chairman and CEO of the American Financial Exchange)).

150. See *Overnight Bank Funding Rate Data*, FED. RSRV. BANK N.Y. [hereinafter *OBFR*], <https://apps.newyorkfed.org/markets/autorates/obfr> [<https://perma.cc/BNH6-XE2C>].

Eurodollar transactions,¹⁵¹ and more.¹⁵² The rate is administered by the New York Fed and is based on actual transactional data.¹⁵³ It is only published on a daily basis, with no tenors or term rates.¹⁵⁴ The volume of transactions underlying OBFR is moderately high, averaging around \$200 billion daily in 2020.¹⁵⁵

ARRC considered OBFR as the top alternative to SOFR, and there remain solid arguments both for and against its use as a replacement.¹⁵⁶ Proponents argue OBFR is less volatile and more closely follows daily USD LIBOR than SOFR;¹⁵⁷ the definition of OBFR as an unsecured bank borrowing rate is closer to USD LIBOR than the secured repo market underlying SOFR; and OBFR has strong oversight, clear reliance on transactional data, and moderate trading volume lacking in USD LIBOR.¹⁵⁸ ARRC's second report noted the downsides to OBFR, including a lower trading volume than SOFR and the heavy use of arbitrage trades¹⁵⁹ in the OBFR market, making the market less representative of actual funding rates.¹⁶⁰

iii. *Effective Federal Funds Rate (EFFR)*

The Effective Federal Funds Rate (EFFR) is the original version of OBFR, also measuring unsecured bank borrowing costs and published by the New York Fed.¹⁶¹ The key difference between EFFR and OBFR

151. The Eurodollar market, for purposes of OBFR, includes overnight unsecured borrowing of U.S. dollars at banks and bank branches outside of the United States. Marco Cipriani & Julia Gouny, *The Eurodollar Market in the United States*, FED. RSRV. BANK N.Y.: LIBERTY ST. ECON. (May 27, 2015), <https://libertystreeteconomics.newyorkfed.org/2015/05/the-eurodollar-market-in-the-united-states.html> [<https://perma.cc/M6JZ-DVJF>].

152. See *OBFR*, *supra* note 150.

153. *Id.*

154. See *id.*

155. See *id.*

156. See *Federal Funds Data*, FED. RSRV. BANK N.Y., <https://apps.newyorkfed.org/markets/autorates/fed%20funds> [<https://perma.cc/HPP6-KUHP>].

157. See Figure 2.

158. See ALT. REFERENCE RATES COMM., *supra* note 131, at 8 (calling OBFR an IOSCO compliant rate).

159. Arbitrage trades happen when a bank who cannot earn the Federal Reserve's interest rate on excess reserves (IOER) temporarily lends money to a bank who can, thereby ensuring their excess funds earn higher interest. Alt. Reference Rates Comm., *Frequently Asked Questions*, FED. RSRV. BANK N.Y., <https://www.newyorkfed.org/arrc/faq> [<https://perma.cc/V9J9-SX6H>]. Approximately 90% of trades over OBFR are arbitrage trades. *Id.*

160. See ALT. REFERENCE RATES COMM., *supra* note 131, at 8.

161. See *Federal Funds Data*, *supra* note 156.

is the market that they measure. While OBFR measures, *inter alia*, the Eurodollar market, EFFR exclusively measures U.S. borrowing by banks.¹⁶² OBFR was created as an alternative in 2016 by the New York Fed because the inclusion of the Eurodollar market meant increasing transactional volume “three to four times,” thereby providing greater depth to the data backing the rate.¹⁶³ The volume of transactions underlying EFFR has averaged around \$75 billion daily in 2020.¹⁶⁴ EFFR was considered by ARRC, but OBFR was seen as a better option due to a higher volume of trading underlying the rate.¹⁶⁵

iv. American Interbank Offered Rate (AMERIBOR)

The American Interbank Offered Rate (AMERIBOR) measures the unsecured overnight lending rate among members of a private electronic exchange.¹⁶⁶ It is run by the self-regulated American Financial Exchange (AFX).¹⁶⁷ Like LIBOR, AMERIBOR measures unsecured lending rates, but unlike LIBOR it does not solely measure interbank lending.¹⁶⁸ Additionally, AFX includes small and midsized banks.¹⁶⁹ Daily trading volumes are small compared to other rates, ranging around \$2 billion daily.¹⁷⁰ AMERIBOR has been described as an ideal reference rate for small and midsized lenders.¹⁷¹ Unlike major financial institutions, most banks do not have the capital necessary to trade on the secured repo markets, making SOFR and other rates somewhat of a mismatch for smaller bank lending costs.¹⁷² AMERIBOR’s proponents

162. *Id.*

163. See Cipriani & Gouny, *supra* note 151.

164. See *Federal Funds Data*, *supra* note 156.

165. See ALT. REFERENCE RATES COMM., *supra* note 131, at 8.

166. See American Financial Exchange, *Competitive Advantages of AMERIBOR*, AMERIBOR, <https://ameribor.net/competitive-advantages-of-ameribor> [<https://perma.cc/C6NM-J9DK>].

167. See American Financial Exchange (AFX), AMERIBOR, <https://ameribor.net/american-financial-exchange> [<https://perma.cc/W92D-ML4Y>].

168. See *Background*, AMERIBOR, <https://ameribor.net/background> [<https://perma.cc/7CD8-EYW3>].

169. *Id.*

170. *AFX Hits Record Volume on AMERIBOR, Adds Giancarlo to Board*, SEC. FIN. MONITOR (Sept. 19, 2019), <https://finadium.com/afx-hits-record-volume-on-ameribor-adds-giancarlo-to-board> [<https://perma.cc/93DX-AQJQ>].

171. See *id.*

172. Will Acworth, *AFX Founder Says New Interbank Market Will Spark Demand for Ameribor Derivatives*, FIA (Apr. 2, 2020), <https://www.fia.org/articles/afx-founder-says-new-interbank-market-will-spark-demand-ameribor-derivatives> [<https://perma.cc/GS64-89EJ>] (“We believe SOFR is an appropriate benchmark for larger

point to its relative stability and close tracking with LIBOR as a reason to consider the rate moving forward.¹⁷³ Detractors point to its low trading volume and reliance on trades by small and midsize lenders as reasons it should not be considered as a broader replacement for USD LIBOR.¹⁷⁴ ARRC does not appear to have considered AMERIBOR during its search for a broad replacement to USD LIBOR.

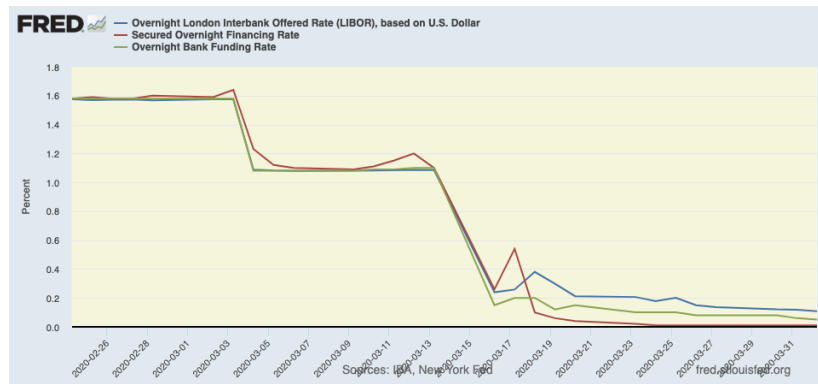


Figure 2¹⁷⁵

2. Replacement Rates in Other LIBOR Currencies

Authorities overseeing other currencies have created working groups similar to ARRC to recommend their own replacement rates. A survey of these replacements will help identify characteristics deemed important by a range of market participants.

financial institutions that have access to collateral and the ability to broadly operate on secured markets.”).

173. Richard Sandor & Robert McDonald, *Why Financial-Market Pioneer Richard Sandor Is Building “The Most Boring Benchmark in America,”* KELLOGG SCH. MGMT.: KELLOGGINSIGHT (Mar. 2, 2020), <https://insight.kellogg.northwestern.edu/article/financial-market-pioneer-richard-sandor-building-ameribor> [https://perma.cc/88QG-KKA2] (“AMERIBOR is highly correlated with the old LIBOR and the least volatile of interest rate benchmarks.”).

174. Letter from Jerome H. Powell, Chair, Bd. of Governors of the Fed. Rsrv. Sys., to Sen. Tom Cotton (May 28, 2020), <https://www.scribd.com/document/464255988/Chair-Powell-to-Sen-Cotton-5-28-20> [https://perma.cc/YT7P-SJGV] (“While [AMERIBOR] is a fully appropriate rate for the banks that fund themselves through [AFX] . . . it may not be a natural fit for many market participants.”).

175. <https://fred.stlouisfed.org> (choose “Overnight London Interbank Offered Rate (LIBOR), based on U.S. Dollar” from search bar; select “EDIT GRAPH,” “ADD LINE,” and add “Secured Overnight Financing Rate” and “Overnight Bank Funding Rate” individually; select date range from options above the graph) (displaying data available from ICE Benchmark Administration Limited (IBA) and the Federal Reserve Bank of New York).

i. *Sterling Overnight Index Average Rate (SONIA)*

The Sterling Overnight Index Average Rate (SONIA) was created in 1997, and administration of the rate was handed to the Bank of England (BoE) when the rate underwent a transition in 2018.¹⁷⁶ The rate measures unsecured borrowing interest for banks in the overnight market.¹⁷⁷ SONIA considers both borrowing between banks and borrowing by a bank from an institutional investor, a key difference from LIBOR.¹⁷⁸ Like SOFR, SONIA is based on actual transactions, not expert estimates.¹⁷⁹ While banks themselves report data, BoE has instituted a rigorous system to ensure accuracy.¹⁸⁰

The Working Group on Sterling Risk-Free Reference Rates has selected SONIA as the replacement reference rate for GBP LIBOR, similar to ARRC's selection of SOFR as a replacement for USD LIBOR.¹⁸¹ The Group has noted its plans to offer various tenors of SONIA before LIBOR's discontinuation in an effort to ease the transition.¹⁸² Indeed, some private groups have already begun to publish one-, three-, and six-month tenors of SONIA.¹⁸³ BoE has described the volume of trading underpinning SONIA to be "robust," at an estimated £40 billion daily.¹⁸⁴

176. *SONIA Interest Rate Benchmark*, BANK ENG., <https://www.bankofengland.co.uk/markets/sonia-benchmark> [<https://perma.cc/7M26-YAWY>].

177. *Id.*

178. *Id.*

179. *See Administration of SONIA*, BANK ENG., <https://www.bankofengland.co.uk/markets/sonia-benchmark/administration-of-sonia> [<https://perma.cc/4VJ5-MYKG>].

180. *Id.* ("We base SONIA entirely on transactions that are reported to us.").

181. WORKING GRP. ON STERLING RISK-FREE REFERENCE RATES, BANK OF ENG., *TERMS OF REFERENCE* (2020), <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr-terms-of-reference.pdf> [<https://perma.cc/RC4X-RCYF>].

182. WORKING GRP. ON STERLING RISK-FREE REFERENCE RATES, BANK OF ENG., *USE CASES OF BENCHMARK RATES 6* (2020), <https://www.bankofengland.co.uk/-/media/boe/files/markets/benchmarks/rfr/use-cases-of-benchmark-rates-compounded-in-arrears-term-rate-and-further-alternatives.pdf> [<https://perma.cc/TL2L-FDZ6>].

183. *See, e.g., Refinitiv Term SONIA*, REFINITIV, <https://www.refinitiv.com/en/financial-data/financial-benchmarks/term-sonia-reference-rates> [<https://perma.cc/6UWJ-QG5N>].

184. Press Release, Bank of Eng., *SONIA Recommended as the Sterling Near Risk-Free Interest Rate Benchmark* (Apr. 28, 2017), <https://www.bankofengland.co.uk/-/media/boe/files/news/2017/april/sonia-recommended-as-the-sterling-near-risk-free-interest-rate-benchmark.pdf> [<https://perma.cc/PFX2-C7YS>]; Huw Jones, *Bank of England To Revamp SONIA Benchmark in Transparency Drive*, REUTERS (Mar. 30, 2017), <https://www.reuters.com/article/uk-boe-regulations-sonia/bank-of-england-to-revamp-sonia-benchmark-in-transparency-drive-idUKKBN1710PB>.

ii. Tokyo Overnight Average Rate (TONAR)

The Tokyo Overnight Average Rate (TONAR)¹⁸⁵ measures unsecured overnight borrowing between banks in the Japanese yen market.¹⁸⁶ It is administered by the Bank of Japan (BoJ) using data from money market brokers.¹⁸⁷ TONAR's data comes from actual transactions, checked by BoJ.¹⁸⁸ It was recommended by the Study Group on Risk-Free Reference Rates as the primary replacement for JPY LIBOR upon discontinuation.¹⁸⁹ TONAR does not yet have published term rates, though a subgroup has been convened to work on the issue.¹⁹⁰ Japanese authorities have called the transaction volume "considerable" and "diverse."¹⁹¹

iii. Swiss Average Rate Overnight (SARON)

The Swiss Average Rate Overnight (SARON) measures the overnight secured interbank lending market for Swiss francs (CHF).¹⁹² It is administered by a stock exchange, SIX, which is owned by financial institutions.¹⁹³ The data is gleaned from actual transactions, not reporting by banks themselves.¹⁹⁴ It was recommended by the National Working Group on CHF Reference Rates as the alternative to CHF

185. The rate has been referred to as both TONA and TONAR. TONAR will be used for this Note.

186. STUDY GRP. ON RISK-FREE REFERENCE RATES, BANK OF JAPAN, PUBLIC CONSULTATION ON IDENTIFICATION AND USE OF A JAPANESE YEN RISK-FREE RATE 6 (2016) [hereinafter JPY RR CONSULTATION], <https://www.boj.or.jp/en/paym/market/sg/rfr1603c.pdf> [<https://perma.cc/QL7D-3HMS>].

187. *Id.* at 12.

188. BANK OF JAPAN, UNCOLLATERALIZED OVERNIGHT CALL RATE CODE OF CONDUCT 1 (2017), <https://www.boj.or.jp/en/statistics/outline/exp/data/exmutan1.pdf> [<https://perma.cc/C3RT-FD23>].

189. See FED. RSRV. BANK OF N.Y., ADOPTING ALTERNATIVE REFERENCE RATES 3 (2019), <https://www.newyorkfed.org/medialibrary/microsites/fxc/files/2019/Global-Alternative-Ref-Rates.pdf> [<https://perma.cc/Y3ZE-A3VA>].

190. See TASK FORCE ON TERM REFERENCE RATES, BANK OF JAPAN, TERMS OF REFERENCE (2019), https://www.boj.or.jp/en/paym/market/jpy_cmte/cmtyoryo05.pdf [<https://perma.cc/LA9W-3KFF>].

191. JPY RR CONSULTATION, *supra* note 186, at 9.

192. See *Swiss Reference Rates (SARON)*, SIX [hereinafter *SARON*], https://www.six-group.com/exchanges/indices/data_centre/swiss_reference_rates/reference_rates_en.html [<https://perma.cc/S87Y-H3T6>].

193. SIX, ANNUAL REPORT 2019, at 19 (2019), <https://www.six-group.com/dam/download/company/report/annual/2019/six-annual-report-2019-en.pdf> [<https://perma.cc/9CCY-LFM9>].

194. See *SARON*, *supra* note 192.

LIBOR.¹⁹⁵ SARON compounded rates of one-, three-, and six-months have been published to replace CHF LIBOR term rates.¹⁹⁶ The volume of trading underlying SARON is relatively small, though some analysts expect it to increase as it becomes the go-to reference rate for CHF transactions.¹⁹⁷

iv. *Euro Short-Term Rate (€STR)*

The Euro Short-Term Rate (€STR) measures overnight unsecured interbank borrowing and borrowing between banks and other eligible lenders.¹⁹⁸ It is administered by the European Central Bank (ECB).¹⁹⁹ The data comes from actual transactions reported by banks, which are thoroughly reviewed by the ECB.²⁰⁰ €STR is the Eurozone-recommended reference rate to replace EUR LIBOR.²⁰¹ Term rates have not yet been published, but a working group convened by the ECB has been seeking out potential administrators for such publications.²⁰² €STR's trading volume appears to be substantial and diverse, according to the ECB.²⁰³

195. *NWG Milestones*, SWISS NAT'L BANK (Oct. 5, 2017), https://www.snb.ch/en/for/finmkt/finmkt_benchm/id/finmkt_NWG_milestones [<https://perma.cc/P8M9-WPSE>].

196. *See SARON Compound Rates*, SIX, https://www.six-group.com/exchanges/indices/data_centre/swiss_reference_rates/compound_rates_en.html [<https://perma.cc/3LP5-ND3H>].

197. PRICEWATERHOUSECOOPERS, *THE LIBOR TRANSITION* 6 (2019), https://www.pwc.ch/de/publications/2019/The%20LIBOR%20Transition_EN_web.pdf [<https://perma.cc/APT4-2NS9>].

198. EUROPEAN CENT. BANK, *THE EURO SHORT-TERM RATE (€STR) METHODOLOGY AND POLICIES* 1 (2018), https://www.ecb.europa.eu/paym/initiatives/interest_rate_benchmarks/shared/pdf/ecb.ESTER_methodology_and_policies.en.pdf [<https://perma.cc/B5UF-ZNJA>].

199. *Id.*

200. *Id.* at 2.

201. *See id.* at 1.

202. WORKING GRP. ON EURO RISK-FREE RATES, EUROPEAN CENT. BANK, *SURVEY REPLIES ON FORWARD-LOOKING RATES PRODUCTION* 8 (2020), https://www.ecb.europa.eu/paym/interest_rate_benchmarks/WG_euro_risk-free_rates/shared/pdf/20200702/Item_2_1_Update_administrators_forward_looking_%20term_rates_EuroSTR.pdf [<https://perma.cc/4PV5-Y7TS>].

203. *Euro Short-Term Rate (€STR) Questions and Answers*, EUROPEAN CENT. BANK, https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/euro_short-term_rate/html/eurostr_qa.en.html [<https://perma.cc/FE3S-29NN>].

3. Common Characteristics of Replacement Rates

A number of reference rates are promising as potential USD LIBOR replacements. They vary in their methodology, tenor availability, oversight, and volume, but all are based on transactional data, making them “risk-free rates.” A survey of other currencies shows gravitation towards a single replacement rate with the following qualities: some form of tenor or term rate available, risk-free rates, a high trading volume, and public administration (with CHF being the exception to the last two). These takeaways will be important in selecting a USD LIBOR replacement rate(s).²⁰⁴

204. See *infra* Part III.B.1.

LIBOR Alternatives


| | Rate | Administrator Oversight | Secured vs. Unsecured | Measurement | Data Reliability | Tenors | Volume Underlying Rate |
|---|----------|-------------------------------|-----------------------|--|--|---|-----------------------------|
|  | LIBOR | ICE (Private) | Unsecured | Interbank lending only | Insufficient volume to ensure accurate data and historical manipulation mean low confidence in rate. | USD, GBP, EUR, CHF, & JPY (Daily, 1-week, 1-, 2-, 3-, 6-, & 12-month) | Severely diminished (~\$1b) |
|  | SOFR | New York Fed (Public/Private) | Secured | Overnight repo market | Based on actual transactional data, high confidence. | USD (Daily, 1-, 3-, & 6-month) | High (~\$900b) |
|  | SONIA | BoE (Public) | Unsecured | Overnight GBP borrowing by banks | Reported by banks, backed by actual transactional data, and strong oversight. | GBP (Daily, 1-, 3-, & 6-month) | "Robust" (~£40b) |
|  | TONAR | BoJ (Public) | Unsecured | Overnight JPY interbank lending | Reported by banks, backed by actual transactional data, and strong oversight. | JPY (Daily) | "Considerable" |
|  | SARON | SIX (Private) | Secured | Overnight interbank repo market | Based on actual transactional data. | CHF (Daily, 1-, 3-, & 6-month) | Small |
|  | €STR | ECB (Public) | Unsecured | Overnight Euro borrowing by banks | Reported by banks, backed by actual transactional data, and strong oversight. | EUR (Daily) | Substantial |
|  | OBFR | New York Fed (Public/Private) | Unsecured | Overnight USD borrowing by banks, Eurodollar, other | Based on actual transactional data. | USD (Daily) | Moderate (~\$200b) |
|  | EFFR | New York Fed (Public/Private) | Unsecured | Overnight USD borrowing by banks | Based on actual transactional data. | USD (Daily) | Low (~\$75b) |
|  | AMERIBOR | AFX (Private) | Unsecured | Overnight USD borrowing by AFX members, volume weighted average. | Based on actual transactional data. | USD (Daily; 1-week, 1- & 3-month futures) | Low (~\$2b) |

Table 1

II. HOW LIBOR'S DISCONTINUATION AFFECTS THE GLOBAL ECONOMY

Individual consumers and the global economy will be deeply affected by the discontinuation of LIBOR. Legacy contracts have the potential to cause the biggest issues when transitioning away from the ubiquitous rate. Seven classes of financial contracts have significant

exposure to USD LIBOR past discontinuation. The fallback language in these contracts generally falls into three categories: (1) workable re-versions to an alternative rate; (2) unworkable attempts to recreate LIBOR individually; and (3) silence.

A. WHY LIBOR'S DISCONTINUATION IS IMPORTANT

LIBOR's discontinuation and the resulting contractual uncertainty will likely have massive effects on individual consumers and the broader economy. LIBOR's sheer size, referenced in nearly \$350 trillion of financial contracts,²⁰⁵ means critical segments of the world's economy are tied to a dying rate. Financial authorities have raised alarms, noting "the risks surrounding [LIBOR's discontinuation] pose a potential threat to the safety and soundness of individual financial institutions and to financial stability."²⁰⁶ Some traders at critical financial institutions have incurred tens of millions of dollars in exposure to LIBOR-based contracts.²⁰⁷ Should financial institutions fail to solve their ongoing LIBOR contract problems before LIBOR ceases, these financial institutions could, at minimum, be restricted in their ability to participate in normal market activities while existing LIBOR contracts are resolved. In addition, the choice of a replacement rate for LIBOR in existing and future contracts has major monetary implications, as a slight shift in interest rates among trillions in outstanding financial contracts has the potential to shift billions of dollars between different market participants.

Consumers themselves may have contracts based on LIBOR. At the end of 2016, an estimated \$1.2 trillion in adjustable rate mortgages (ARMs) were tied to USD LIBOR.²⁰⁸ Many ARMs have maturities extending out 30 years, meaning a significant portion of those contracts will still be outstanding past 2023.²⁰⁹ Other forms of consumer credit, including credit cards, auto loans, consumer loans, and student loans, are also often tied to USD LIBOR.²¹⁰ Depending on their contractual language, consumer contracts could be tied to a "zombie LIBOR"

205. See ICE POSITION PAPER, *supra* note 2, at 10.

206. See ALT. REFERENCE RATES COMM., *supra* note 131, at 1.

207. ENRICH, *supra* note 55, at 166.

208. See ALT. REFERENCE RATES COMM., *supra* note 131, at 33.

209. See Sean Beckett, *Why America's Homebuyers & Communities Rely on the 30-Year Fixed-Rate Mortgage*, FREDDIE MAC (Apr. 10, 2017), http://www.freddiemac.com/perspectives/sean_beckett/20170410_homebuyers_communities_fixed_mortgage.page [<https://perma.cc/BJ6W-S9LG>].

210. See ALT. REFERENCE RATES COMM., *supra* note 131, at 33.

with rapidly fluctuating rates,²¹¹ be sucked into a new reference rate without any say,²¹² or have their contracts thrown into general uncertainty.

B. WHAT FINANCIAL CONTRACTS ARE VULNERABLE TO USD LIBOR DISCONTINUATION?

The initial step in understanding the scope of USD LIBOR's legacy contract problem is determining which contracts are vulnerable. This analysis requires two key questions. First, what types of financial contracts frequently use USD LIBOR? Second, which of those classes of contracts have a significant volume of legacy contracts extending past discontinuation?

ARRC estimated by year end 2016, there were approximately \$199 trillion in outstanding USD LIBOR-based financial contracts.²¹³ Eighty-two percent of those contracts are likely to mature by 2021, the original discontinuation date; while some additional contracts may mature before the extended discontinuation date in mid-2023, there will still likely be trillions in outstanding contracts without preemptive action by the parties.²¹⁴ Parties continue to trade USD LIBOR-based contracts, so total outstanding legacy contracts in 2023 may be even higher.²¹⁵

211. Alex Harris, 'Zombie LIBOR' Threatens Market's Complacent View, *JPMorgan Says*, BLOOMBERG (Sept. 9, 2019), <https://www.bloomberg.com/news/articles/2019-09-09/-zombie-libor-risks-are-being-underappreciated-jpmorgan-says> ("However, because there's no explicit ban on submissions, JPMorgan suspects a smaller panel of firms may keep feeding it numbers, leaving the index in a problematically undead state.").

212. See *infra* Part II.C.5.

213. See ALT. REFERENCE RATES COMM., *supra* note 131, at 2.

214. *Id.* The figure is obtained by multiplying the remaining 18% of contracts with a total \$199 trillion exposure. This is a rough and imprecise estimate, and the total worldwide LIBOR exposure is likely higher. Even as a rough estimate, it shows the sheer magnitude of legacy USD LIBOR contracts.

215. INT'L SWAPS & DERIVATIVES ASS'N, ADOPTION OF RISK-FREE RATES: MAJOR DEVELOPMENTS IN 2020, at 16 (2020), <https://www.isda.org/a/WhXTE/Adoption-of-Risk-Free-Rates-Major-Developments-in-2020.pdf> [<https://perma.cc/GAD5-33J7>] (showing a chart of trillions of USD LIBOR traded derivatives in 2019). Only some of the legacy contracts are now incorporating workable fallback language anticipating LIBOR's discontinuation. See, e.g., Press Release, Alt. Reference Rates Comm., ARRC Welcomes Fannie Mae and Freddie Mac's Decision to Use ARRC Recommended Fallback Language in New Adjustable Rate Mortgages (Nov. 15, 2019), https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/ARRC_Fannie_Freddie_Press_Release.pdf [<https://perma.cc/8KUP-8YVT>].

The bulk of USD LIBOR exposure is spread amongst six types of derivatives.²¹⁶ “Derivatives” are contracts whose value is based upon some other factor, such as the price of LIBOR.²¹⁷ Only three of the six USD LIBOR derivative categories have significant risk from legacy contracts: interest rate swaps, interest rate options, and cross-currency swaps.²¹⁸ These three classes have less than ninety percent maturity by 2021, with interest rate options seeing only sixty-eight percent maturity by 2025.²¹⁹

USD LIBOR-based contracts are common in certain business and consumer loans, bonds, and securitizations.²²⁰ Four classes of these contracts have significant legacy issues beyond discontinuation: syndicated loans, commercial mortgages, consumer mortgages, and floating rate notes.²²¹ While these classes have significantly lower volume than derivatives, they can present more complex issues for fixing contractual issues.²²²

This Note identifies seven classes of legacy financial contracts as most vulnerable to USD LIBOR discontinuation: interest rate swaps, interest rate options, cross-currency swaps, syndicated loans, consumer mortgages, commercial mortgages, and floating rate notes. Understanding these types of contracts will help identify the contractual language (or lack of language) most likely to cause problems upon discontinuation.

C. WHAT IS THE STANDARD CONTRACTUAL LANGUAGE OF VULNERABLE CONTRACTS?

The seven classes of vulnerable legacy contracts incorporate USD LIBOR in different ways. The explanations of each type of contract below are simplified versions. The vast majority of these financial contracts reference three tenors of USD LIBOR: one-month, three-month,

216. The total exposure within these derivatives is approximately \$190 trillion. ALT. REFERENCE RATES COMM., *supra* note 131, at 2.

217. James Chen, *Derivative*, INVESTOPEDIA (Jan. 27, 2020), <https://www.investopedia.com/terms/d/derivative.asp> [<https://perma.cc/W79R-DRNM>].

218. See ALT. REFERENCE RATES COMM., *supra* note 131, at 2.

219. *Id.*

220. *See id.*

221. *See id.*

222. *See infra* Parts II.C.4–7.

and six-month.²²³ Existing fallback language varies²²⁴ but can generally be slotted into three categories: (1) workable fallback to a non-LIBOR rate; (2) unworkable fallback to some synthetic version of LIBOR; or (3) no fallback language referencing LIBOR's unavailability. But one thing is true across almost all financial contracts: none envisioned a permanent end to LIBOR when the contract was executed.²²⁵

1. Interest Rate Swaps

Interest rate swaps occur when two or more parties agree to trade a portion of an interest payment.²²⁶ Traditionally, borrowers would enter into interest rate swaps in order to either limit or increase their exposure to variable interest rates.²²⁷ However, over time interest rate swaps became known more for financial speculation by

223. See FIN. STABILITY BD., *supra* note 74, at 243 (showing table of frequently used USD LIBOR tenors with various types of financial contracts). A small number of contracts reference twelve-month USD LIBOR. *Id.* Other tenors of USD LIBOR (overnight, one-week, and two-month) "are rarely used." *Id.* at 242.

224. CHRISTOPHER S. SCHELL, VIDAL VANHOOF, ADAM SCHNEIDER, SERGE GWYNNE & MING MIN LEE, LIBOR FALLBACKS IN FOCUS: A LESSON IN UNINTENDED CONSEQUENCES 1 (2018), <https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2018/may/Oliver%20Wyman%20-%20LIBOR%20Fallbacks%20in%20Focus.PDF> [<https://perma.cc/3NM2-WZ8F>] ("Outside the derivatives world, fallback language is frequently inconsistent, particularly across products and institutions.").

225. *Id.* ("Additionally, existing contractual fallback language was typically originally intended to address a temporary unavailability of LIBOR, not its permanent discontinuation.").

226. See Justin Kuepper, *Interest Rate Swap Definition*, INVESTOPEDIA (Feb. 19, 2020), <https://www.investopedia.com/terms/i/interestrateswap.asp> [<https://perma.cc/8PH6-L8ZZ>]. Suppose person A takes out a loan with a variable interest rate of LIBOR + 1%. Person B takes out a similar loan, but with a fixed interest rate of 3%. After some time, A may regret the uncertainty of their payments, while B might want to test the market to see if they can lower their rate below 3%. A could agree to pay 2% to B, who in return pays the LIBOR rate to A. This creates a side contract, known as an "interest rate swap," separate from the individual loans. The resulting arrangement means that A now pays a fixed 3% interest rate on their loan while B is paying LIBOR + 1%. For a more detailed explanation of interest rate swaps and the resulting payments, see Khan Academy, *Interest Rate Swap 1*, YOUTUBE (Sept. 16, 2011), <https://www.youtube.com/watch?v=PLjyj1FJqig&feature=youtu.be>. See also Khan Academy, *Interest Rate Swap 2*, YOUTUBE (Sept. 16, 2011), <https://www.youtube.com/watch?v=xE43JrjCpjE&feature=youtu.be>.

227. See generally BB&T, MANAGING INTEREST RATE RISK WITH SWAPS (2018), <https://www.bbt.com/content/dam/bbt/bbtcom/pdf/commercial/intellectual-capital/managing-interest-rate-risk-swaps.pdf> [<https://perma.cc/92K2-P9D9>] (discussing how swaps work and why businesses use them). In the example discussed *supra* note 226, both parties switched their risk for interest payments between variable and fixed rates.

traders than as a way for borrowers to hedge their loan payments.²²⁸ The vast majority of interest rate swaps use standard contractual language provided by an industry group.²²⁹ The International Swaps and Derivatives Association (ISDA) publishes the “ISDA Master Agreement,” which provides fallback language for contracts using LIBOR.²³⁰ The fallback language generally directs an agent of the contract to obtain quotes from LIBOR panel banks to come up with a temporary, synthetic LIBOR rate.²³¹

There is one major problem with this: ISDA has said this provision was not designed to address a permanent discontinuation of LIBOR.²³² Indeed, when LIBOR is discontinued, it is just short of impossible to believe panel banks will be willing to give daily quotes to every outstanding derivative contract.²³³ As such, interest rate swaps are faced with the dilemma of having clear but unworkable fallback language.

228. See Sergey Chernenko & Michael Faulkender, *The Two Sides of Derivatives Usage: Hedging and Speculating with Interest Rate Swaps*, 46 J. FIN. & QUANTITATIVE ANALYSIS 1727, 1750 (2011) (noting that “firms altering their use of interest rate swaps” was consistent with speculation). Traders with confidence about where future financial markets and reference rates like LIBOR would skew would strategically enter contracts paying out upon those events. Indeed, as mentioned above, one trader at the center of the LIBOR scandal used speculation (and fraud) with interest rate swaps to generate hundreds of millions of dollars in revenue for his employers. See *supra* Part I.C.2. When a trader is holding a large volume of swaps based off of LIBOR, even small changes to the rate can mean significantly higher or lower costs on each interest payment. See *supra* note 49.

229. See generally INT’L SWAPS & DERIVATIVES ASS’N, LEGAL GUIDELINES FOR SMART DERIVATIVES CONTRACTS: THE ISDA MASTER AGREEMENT (2019) [hereinafter ISDA MASTER AGREEMENT], <https://www.isda.org/a/23iME/Legal-Guidelines-for-Smart-Derivatives-Contracts-ISDA-Master-Agreement.pdf> [<https://perma.cc/MN3P-4BL7>] (explaining important legal language to be aware of and maintain in smart derivatives contracts).

230. *Id.*

231. INT’L SWAPS & DERIVATIVES ASS’N, INTERBANK OFFERED RATE (IBOR) FALLBACKS FOR 2006 ISDA DEFINITIONS 5 (2019), <https://www.isda.org/a/n6tME/Supplemental-Consultation-on-USD-LIBOR-CDOR-HIBOR-and-SOR.pdf> [<https://perma.cc/28FT-ZH5B>]; see also ROY CHOUDHURY & KERRY O’BRIEN, ERNST & YOUNG, FALLBACK LANGUAGE: ADDRESSING THE LEGAL AND CONTRACTUAL CHALLENGES OF IBOR TRANSITION 7 (2019), https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/ibor/ey-fallback-language.pdf [<https://perma.cc/H364-JNJT>] (providing fallback language examples).

232. See INT’L SWAPS & DERIVATIVES ASS’N, *supra* note 231, at 5 (“None of the current fallbacks described above were designed to cover permanent discontinuations.”).

233. *Id.* (“If an IBOR has been permanently discontinued, it is likely that major dealers would be unwilling and/or unable to give such quotations.”).

2. Interest Rate Options

Interest rate options are a different kind of derivative, essentially allowing a party to “bet” on changes to a benchmark rate, like LIBOR, with payouts depending on where the rate ends up.²³⁴ Much like interest rate swaps, interest rate options can be used both to hedge investments and profit off of speculation.²³⁵ Interest rate options also frequently rely on the ISDA Master Agreement.²³⁶ This means interest rate options, like interest rate swaps, will often have specific but unworkable fallback language.²³⁷

3. Cross-Currency Swap

Cross-currency swaps involve two parties trading in different currencies.²³⁸ The most common users of cross-currency swaps are financial institutions and multinational corporations.²³⁹ For parties to cross-currency swaps, the end of LIBOR could present a more complex challenge. Some cross-currency swaps involve multiple versions of

234. See Chris B. Murphy, *Interest Rate Options Definition*, INVESTOPEDIA (June 25, 2019), <https://www.investopedia.com/terms/i/interestrateoptions.asp> [<https://perma.cc/GA48-LTUM>] (“An interest rate option is a financial derivative that allows the holder to benefit from changes in interest rates.”). Suppose investor *A* believes the LIBOR rate will rise in the next three years. Investor *B*, however, thinks it is unlikely to rise a significant amount or might even fall. *A* will pay *B* an upfront premium on an interest rate option saying LIBOR will rise above a certain rate. If, during the maturity of the option, LIBOR does rise above that rate, *A* will be able to cash out on that option and make a profit. If LIBOR does not rise above that rate, *A* receives nothing and *B* makes a profit from the upfront premium paid. Interest rate options can also be based on a rate falling below a certain level. *Id.*

235. See *id.* (“Aside from outright speculation on the direction of interest rates, interest rate options are also used by portfolio managers and institutions to hedge interest rate risk.”). Looking to the example discussed *supra* in note 234, it is easy to see why manipulating LIBOR was potentially profitable. By raising or lowering rates, a trader with positions based upon a higher or lower LIBOR could put themselves “in the money” on financial contracts such as interest rate options. Many interest rate option contracts also provide increasing profits if a rate is raised many points past the set level, providing continual incentives to move the rate in a favorable direction. See *id.*

236. ISDA MASTER AGREEMENT, *supra* note 229.

237. See *supra* notes 231–33 and accompanying text.

238. See *How Do Currency Swaps Work?*, FOREX CAP. MKTS., <https://www.fxcm.com/uk/insights/how-do-currency-swaps-work> [<https://perma.cc/TYR3-WZQE>]. Suppose company *A* in the United States needs access to euros (EUR), while company *B* in Germany needs access to U.S. dollars (USD). Instead of going to a bank, *A* agrees to give *B* \$1,000,000 with an interest rate of USD LIBOR + 1%, while *B* agrees to give *A* €900,000 with an interest rate of EUR LIBOR + 1%. At the end of the term of the contract, the parties will exchange the currencies back at the initial exchange rate or some other specified rate. *Id.*

239. *Id.*

LIBOR or LIBOR and another reference rate.²⁴⁰ For example, a contract could trade in U.S. dollars and Japanese yen, referencing both USD LIBOR and JPY LIBOR as the respective reference rates.²⁴¹ It appears parties to cross-currency swaps are more varied in the fallback language used. Some may have a poll of LIBOR banks²⁴² (similar to interest rate swaps), while others may have no language addressing LIBOR's unavailability.²⁴³ New fallback language may need to take into account disruptions of both rates if they are versions of LIBOR.²⁴⁴

4. Syndicated Business Loans

Syndicated business loans are arrangements in which more than one lender teams up to provide funding to a borrower.²⁴⁵ Much like a basic loan, many syndicated loans have variable interest rates, with approximately \$1.5 trillion tied to USD LIBOR.²⁴⁶ Syndicated business loans generally have more workable fallback language than the previous examples. A typical provision first looks to recreate LIBOR by calling panel banks and coming up with a quote—language similar to

240. See example discussed *supra* note 238 (providing a cross-currency example in which multiple LIBOR rates are used); see also ALT. REFERENCE RATES COMM., PRELIMINARY RECOMMENDATIONS FOR INTERDEALER CROSS-CURRENCY SWAP MARKET CONVENTIONS (2019), https://www.newyorkfed.org/medialibrary/Microsites/arcc/files/2019/Preliminary_Recommendations_for_Interdealer_Cross-Currency_Swap_Market_Conventions.pdf [<https://perma.cc/SWA4-ULVU>] (discussing “potential conventions for interdealer trading of RFR-RFR and RFR-IBOR cross currency swaps”).

241. See *supra* note 238 and accompanying text.

242. See, e.g., *Form of Currency Swap Agreement*, SEC, <https://www.sec.gov/Archives/edgar/data/1549785/000119312512404285/d415397dex103.htm> [<https://perma.cc/AY7Y-KDC4>] (defining “USD-LIBOR-Reference Banks”).

243. See, e.g., *Confirmation of Cross-Currency Swap*, SEC (Oct. 12, 2010), <https://www.sec.gov/Archives/edgar/data/1508478/000119312511077213/dex1012.htm> [<https://perma.cc/9PYF-KPKF>] (providing an example of a letter agreement for a cross-currency swap transaction).

244. *Supra* note 238 (providing a cross-currency example in which multiple LIBOR rates are used).

245. Troy Segal, *Syndicated Loan*, INVESTOPEDIA (June 23, 2020), <https://www.investopedia.com/terms/s/syndicatedloan.asp> [<https://perma.cc/XQ25-VLGD>]. Suppose company *A* wants to finance a \$5 billion expansion of its business and it asks bank *B* to provide them a loan. But *B* either does not have the capital to provide the full \$5 billion or does not want to shoulder the full risk of a loan to *A*. So instead *B* goes to banks *C*, *D*, *E*, and *F* and has each one chip in \$1 billion. Company *A* now has its \$5 billion loan, but it comes courtesy of a syndicate made up of banks *B*, *C*, *D*, *E*, and *F*. This can be done with thousands of parties. See *id.*

246. See ALT. REFERENCE RATES COMM., *supra* note 131, at 2 tbl.1.

interest rate swaps and options.²⁴⁷ However, if this is not possible, most syndicated business loans' fallback language reverts the contract to a different rate, such as the Prime Rate.²⁴⁸ While differences between these rates may change how much interest is paid on the loans, the fallback language does appear to be "workable" post-LIBOR since the alternative rates will still exist.

5. Consumer Mortgages

Adjustable rate mortgages (ARMs) are familiar to many consumers. ARMs involve two relevant components: the index/reference rate and the "margin."²⁴⁹ About \$1.2 trillion in ARMs are estimated to be tied to USD LIBOR.²⁵⁰ While some of these mortgages will end by 2023, the maturity of many mortgages spans thirty years.²⁵¹ As such, many consumers holding ARMs tied to LIBOR will need some type of rate change when it is discontinued.

It appears the most typical fallback language for mortgages gives the lender or the agent the option to choose a replacement rate.²⁵² However, there is typically no language dealing with the possibility a successor rate is either higher or lower on average than LIBOR.²⁵³ In such a case, either the lender or the borrower could benefit from unexpected interest payments if the replacement rate is higher or lower than LIBOR. Similar fallback language has been used in the past when a different reference rate disappeared and lenders were forced to select a new rate.²⁵⁴ But litigation is still possible even with language

247. See *id.* at 28 (describing typical contract language for business loan documentation); *supra* Parts II.C.1–2 (describing standard contract language for interest rate swaps and options).

248. See ALT. REFERENCE RATES COMM., *supra* note 131, at 28 (explaining that when reference bank quotes are unavailable, contract language "implies that the rate paid on these loans would convert to . . . the prime rate or a rate which is typically close to the prime rate").

249. *Adjustable Rate Mortgages*, *supra* note 19.

250. ALT. REFERENCE RATES COMM., *supra* note 131, at 33.

251. Jean Folger, *Commercial Real Estate Loan*, INVESTOPEDIA (June 25, 2019), <https://www.investopedia.com/articles/personal-finance/100314/commercial-real-estate-loans.asp> [<https://perma.cc/VK5X-XEJV>] ("The most popular residential mortgage product is the 30-year fixed-rate mortgage.").

252. ALT. REFERENCE RATES COMM., *supra* note 131, at 33.

253. *Id.*

254. See *Fannie Mae Announces Replacement Indices for Securities Previously Using 1-Month, 3-Month, and 6-Month CD Rate Indices*, FANNIE MAE (Mar. 12, 2014), <http://www.fanniemae.com/portal/funding-the-market/mbs/news/2014/announcement-031214.html> [<https://perma.cc/8HRT-EZNL>] ("Fannie Mae . . . will provide replacement indices to be used for interest rate calculations on [certain] securities.").

giving lenders the right to select a replacement rate; a borrower may be dissatisfied with the replacement rate and believe the choice violated either contractual or legal standards.²⁵⁵ Thus, while the fallback language appears “workable,” consumer mortgages present the possibility of substantial litigation.²⁵⁶

6. Commercial Mortgages

Commercial mortgages are somewhat similar to consumer mortgages, except for one key difference: balloon payments.²⁵⁷ Depending on the terms of the contract, the borrowing party will make regular payments for a set time, after which they will make one final, large payment to fulfill the remainder of the obligation, also known as a “balloon payment.”²⁵⁸ Like consumer mortgages, commercial mortgages with variable interest rates often use LIBOR, with an estimated \$1.1 trillion tied to USD LIBOR.²⁵⁹ Commercial mortgages typically have similar fallback language to syndicated business loans.²⁶⁰ Thus, the language of most commercial mortgages is likely “workable” after LIBOR ends.

7. Floating Rate Notes

Floating rate notes (FRNs) are essentially bonds with fluctuating interest rates.²⁶¹ These financial contracts can be issued by both public and private entities.²⁶² There is an estimated \$1.8 trillion of FRNs tied to USD LIBOR, with \$1.1 trillion coming from the private sector

255. ALT. REFERENCE RATES COMM., PROPOSED LEGISLATIVE SOLUTION TO MINIMIZE LEGAL UNCERTAINTY AND ADVERSE ECONOMIC IMPACT ASSOCIATED WITH LIBOR TRANSITION 8 (2020) [hereinafter PROPOSED LEGISLATIVE SOLUTION], <https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC-Proposed-Legislative-Solution.pdf> [https://perma.cc/Y6SS-9YKF] (“In any event, disputes can be expected to arise with respect to whether or not the selected replacement index satisfied the applicable contractual or legal standards and, if not, what replacement index should have been used instead.”).

256. See CHOUDHURY & O’BRIEN, *supra* note 231, at 11 (“Further, there may be inherent litigation risk associated with those contracts that either (1) allow for one party’s discretion in determining replacement rates or (2) result in a replacement rate that is unfavorable to one or more parties.”).

257. See Folger, *supra* note 251 (defining commercial real estate loans).

258. See *id.* (describing how balloon payments are used to pay off a loan’s remaining balance).

259. See ALT. REFERENCE RATES COMM., *supra* note 131, at 2 tbl.1.

260. See *id.*

261. Chris B. Murphy, *Floating-Rate Note – FRN*, INVESTOPEDIA (Mar. 10, 2020), <https://www.investopedia.com/terms/f/frn.asp> [https://perma.cc/V7SN-HUYR].

262. *Id.*

and \$700 billion coming from public entities.²⁶³ While most existing FRN contracts are set to expire by 2024, a significant portion will not mature for up to 70 years.²⁶⁴ The typical FRN directs an agent to poll a sample of banks to create a LIBOR rate should the official rate be unavailable, similar to derivatives.²⁶⁵ This language is similarly unworkable in practice.

A survey of the seven most vulnerable types of legacy financial contracts shows there are three common contractual frameworks for LIBOR's discontinuation.²⁶⁶ Some contracts fall back to a different reference rate, such as Prime.²⁶⁷ A sizeable portion of contracts look to recreate LIBOR by manually calling banks, an unworkable solution.²⁶⁸ Meanwhile, others are simply silent on the issue.²⁶⁹ These three general frameworks will be important to determine how legislatures and courts should address the coming legacy contract issue.

III. SOLVING THE LIBOR LEGACY CONTRACT PROBLEM

Replacing USD LIBOR in legacy financial contracts presents a legally complex and time-sensitive problem. Sitting back and letting parties to contracts agree to replace the rate might seem like the reasonable approach, but many financial contracts are nearly impossible to amend.²⁷⁰ As a result, taking no action would likely lead to massive economic uncertainty and potential economic disruptions as trillions of dollars' worth of contracts are put into limbo past 2023.

This Note proposes a three-pronged solution for addressing the legacy contract problem. First, USD LIBOR contracts with clear fallback language to a different reference rate should be left alone. Second, legislation should be adopted by the New York legislature (and other state legislatures, if possible) to mandate new fallback language

263. ALT. REFERENCE RATES COMM., *supra* note 131, at 29.

264. *Id.* at 30.

265. *Id.*

266. RICHARDS, *supra* note 10 (noting that LIBOR fallbacks "are of three main types").

267. *Id.*

268. *Id.*

269. *Id.* While most contracts appear to have some fallback language, there are subsets of legacy financial contracts without fallback language. *See id.*

270. *See* SCHELL ET AL., *supra* note 224, at 3 ("The difficulty of amending such contracts varies considerably. While derivatives often have a limited number of counterparties, as do bilateral credit agreements, the process of obtaining consent to amend syndicated credit agreements with large numbers of lenders or widely held securities is likely to be difficult, if not impossible.").

in financial contracts silent on LIBOR discontinuation. This legislation would also replace unworkable fallback language but should give any party to such a contract the ability to opt-out and pursue an alternative plan. Third, the legislation would require opting-out parties to come up with alternative plans and give courts greater equitable powers to resolve USD LIBOR legacy contract disputes. Courts would require contractual performance while having the flexibility to select adequate replacement rates in disputed contracts.

A. LEAVE LEGACY CONTRACTS REFERENCING ALTERNATIVE RATES ALONE

The first solution is the simplest: if a USD LIBOR legacy contract contains fallback language replacing an unavailable LIBOR rate with a different reference rate, the legislature and courts should do nothing. This includes contracts specifying a different rate and those directing some agent to select a different published rate. There are few public policy arguments in support of intervention, as the parties clearly provided their intent to replace one rate with another. In addition, as will be discussed in detail below, interfering with clear contractual language would almost certainly violate the Contracts Clause of the U.S. Constitution.²⁷¹

B. STATE LEGISLATURES SHOULD PASS LEGISLATION REPLACING LIBOR WITH SOFR IN SOME LEGACY CONTRACTS

The vast majority of legacy USD LIBOR contracts are either silent as to LIBOR's discontinuation or have unworkable fallback language, requiring a broader solution. If state legislatures do nothing in advance of discontinuation, state courts²⁷² might be flooded with LIBOR-related litigation, and the economic uncertainty could shock financial markets.²⁷³ As such, state legislatures should provide for a more orderly transition to a new reference rate.

While financial contracts can reference any state law to resolve disputes, New York is the forum overwhelmingly chosen by parties in

271. See U.S. CONST. art. I, § 10, cl. 1; *infra* Part III.B.2.i.

272. Contract disputes are almost universally resolved under state, not federal, law. *Contracts and the Law*, FINDLAW (Feb. 15, 2018), <https://smallbusiness.findlaw.com/business-contracts-forms/contracts-and-the-law.html> [<https://perma.cc/NG3S-T4V2>].

273. *LIBOR Transition: FFIEC Statement on Managing the LIBOR Transition and Guidance for Banks*, OFF. COMPTROLLER CURRENCY (July 1, 2020), <https://www.occ.treas.gov/news-issuances/bulletins/2020/bulletin-2020-68.html> [<https://perma.cc/2QA9-2R65>] ("There is risk of market disruptions, litigation, and destabilized balance sheets if existing contracts cannot seamlessly transition to new rate(s) . . .").

their contracts.²⁷⁴ As a result, the New York legislature should be the primary focus of legacy LIBOR legislation; the state's decisions will ultimately affect the vast majority of outstanding contracts. Even so, other states should consider passing similar legislation to prevent unnecessary litigation in their state courts.

There is little precedent to compare with this legislation. During the euro transition, New York did pass legislation providing for the replacement of defunct currencies with the euro at market rates.²⁷⁵ However, the euro legislation involved a market in which conversion rates were relatively easy to deduce and did not affect obligations differently across multiple contract types.²⁷⁶ As such, this legislation is a relative first look for lawmakers, courts, and financial markets.

1. SOFR Should Be Chosen as USD LIBOR's Replacement Rate

The biggest issue in the LIBOR legacy contract transition is determining the rate(s) to replace it. As noted earlier, there are a number of potential replacement rates for USD LIBOR, including SOFR, OBFR, and AMERIBOR.²⁷⁷ Each rate has distinct advantages and disadvantages, but only SOFR is ready for large-scale prime-time usage. SOFR is backed by a massive volume of underlying transactions, is based on transactional data, is administered transparently by a semi-public entity,²⁷⁸ will be ready for a spread adjustment, has the broadest buy-in from the financial community, and has readily available tenors similar to USD LIBOR.²⁷⁹ In replacing USD LIBOR with SOFR, the

274. Theodore Eisenberg & Geoffrey P. Miller, *The Flight to New York: An Empirical Study of Choice of Law and Choice of Forum Clauses in Publicly-Held Companies' Contracts*, 30 CARDOZO L. REV. 1475, 1478 (2009) ("New York law was overwhelmingly favored for financing contracts . . ."); see also Alt. Reference Rates Comm., *Webcast on Overview of ARRC Proposal for New York State Legislation For U.S. Dollar LIBOR Contracts*, <https://onlinexperiences.com/scripts/Server.nxp?LASCmd=L:0&AI=1&ShowKey=85952&LoginType=0&InitialDisplay=1&ClientBrowser=0&DisplayItem=NULL&LangLocaleID=0&SSO=1&RFR=https://www.newyorkfed.org/arrc/publications> (Apr. 2020) ("[A] significant portion of financial products and agreements that use LIBOR are governed by New York law . . .").

275. N.Y. GEN. OBLIG. LAW § 5-1602 (McKinney 2020).

276. See Press Release, European Cent. Bank, *Determination of the Euro Conversion Rates* (Dec. 31, 1998), https://www.ecb.europa.eu/press/pr/date/1998/html/pr981231_2.en.html [<https://perma.cc/QK7G-TQ42>] (displaying euro conversion rates for participating currencies).

277. See *supra* Table 1.

278. See *supra* note 141 and accompanying text.

279. See *supra* Part I.E.1.i for an in-depth discussion of SOFR.

legislation should also incorporate ARRC's recommended spread adjustment once it becomes published.²⁸⁰

While OBFR and AMERIBOR are reasonable choices for future contracts, they suffer from some important deficiencies. OBFR is backed by shakier underlying transactions, does not have a ready spread adjustment, does not yet have broad financial community backing, and has no published tenors.²⁸¹ AMERIBOR does have published futures tenors, but also suffers from a low volume of underlying transactions, lack of spread adjustment, and limited backing.²⁸² AMERIBOR does measure unsecured lending like LIBOR (and unlike SOFR), but it does not have the volume or diversity of use necessary to be a replacement rate in trillions of dollars of contracts and seems better suited for use by small and midsize banks in future financial contracts.²⁸³ As a result, while SOFR is imperfect and subject to some criticism, it is the only rate ready to be chosen in legacy contract legislation.

2. Legislation Can Mandate Replacement in Certain Contracts, but It Must Provide a Unilateral Opt-Out in Others

The legacy contract legislation should mandate replacement of USD LIBOR with SOFR when possible. For contracts with no fallback language, the legislation should mandate a replacement upon the "discontinuation" of LIBOR. For contracts with unworkable fallback language, it should mandate replacement by default but allow any party the ability to opt-out in order to satisfy constitutional boundaries.

This legislation would require a few distinctions. First, it must distinguish between contracts with unworkable fallback language and those with workable fallback language. It also must define when LIBOR becomes unavailable, known as a "discontinuation event."

i. Constitutional Issues Arise When Interfering with Contracts

The legislation proposed here would change the contractual agreement between private parties. The Contracts Clause generally prohibits the government from passing a "[l]aw impairing the

280. See Press Release, *supra* note 136 (describing a spread adjustment for contracts where SOFR replaces LIBOR).

281. See *supra* Part I.E.1.ii for an in-depth discussion of OBFR.

282. See *supra* Part I.E.1.iv for an in-depth discussion of AMERIBOR.

283. *Id.*

[o]bligation of [c]ontracts.”²⁸⁴ But the prohibition is not absolute.²⁸⁵ The Supreme Court will uphold such a law if it fulfills a two-step test.²⁸⁶ First, the law must not “operate[] as a substantial impairment of a contractual relationship.”²⁸⁷ If it does substantially impair a contractual relationship, the law must be appropriate and reasonable to achieve “a significant and legitimate public purpose.”²⁸⁸

a. How Courts Determine Substantial Impairment

In determining whether a law “substantially impairs” a contract, courts look to three factors: “the extent to which the law undermines the contractual bargain, interferes with a party’s reasonable expectations, and prevents the party from safeguarding or reinstating [their] rights.”²⁸⁹ The Supreme Court recently addressed this issue and clarified how to determine whether these factors are met in *Sveen v. Melin*.²⁹⁰

The Court in *Sveen* upheld a Minnesota law automatically revoking a former spouse’s primary beneficiary designation upon divorce.²⁹¹ In addressing the first question of undermining the contractual bargain, it focused on the intent of the parties at the time of contracting.²⁹² The Court found it reasonable to assume the parties would not have intended for such designation to continue after a divorce.²⁹³ Importantly, the parties did not need to conceive divorce as a possibility at the time the contract was made; the state can set “default rules” even when parties do not consider possible

284. U.S. CONST. art. I, § 10, cl. 1.

285. See *City of El Paso v. Simmons*, 379 U.S. 497, 506–07 (1965) (“For it is not every modification of a contractual promise that impairs the obligation of contract under federal law . . .”).

286. *Sveen v. Melin*, 138 S. Ct. 1815, 1821 (2018) (“To determine when a law [violates the Contracts Clause], this Court has long applied a two-step test.”).

287. *Id.* at 1821–22 (quoting *Allied Structural Steel Co. v. Spannaus*, 438 U.S. 234, 244 (1978)).

288. *Id.* at 1822 (quoting *Energy Rsrvs. Grp., Inc. v. Kan. Power & Light Co.*, 459 U.S. 400, 411–12 (1983)).

289. *Id.*

290. *Sveen*, 138 S. Ct. 1815.

291. *Id.* at 1822 (describing why the law did not substantially impair contractual arrangements under three factors).

292. *Id.* at 1823.

293. See *id.* (noting that “an insured’s failure to change the beneficiary after a divorce is more likely the result of neglect than choice” and that “an insured cannot reasonably rely on a beneficiary designation remaining in place after a divorce”).

contingencies.²⁹⁴ The Court has also focused on whether the statute modifies the core structure of the contract, finding “substantial[] modification[cations]” to be indicative of impairment.²⁹⁵

The Court has outlined a number of considerations when assessing whether a statute “interferes with a party’s reasonable expectations.” In *Sveen*, the Supreme Court found the revocation-upon-divorce statute was similar to the powers granted to divorce courts. This meant the parties had a reasonable expectation that revocation was possible upon divorce, even if it was not guaranteed.²⁹⁶ In effect, the party asserting rights under the contract truly had no reliance interest affected by the legislation.²⁹⁷ In a separate Contracts Clause case, the Supreme Court found a statute did not interfere with a party’s reasonable expectations if it ensured no party to a contract could take advantage of a “strategical, procedural advantage.”²⁹⁸ The Court has also said parties cannot rely on unlikely scenarios to alter substantial obligations and wiggle their way out of contractual performance.²⁹⁹ As such, legislation appears to pass this test as long as it continues a party’s reasonable reliance interests and does not confer unfair advantages.

The Court, however, has placed the most emphasis on the last substantial impairment factor: the ability for a party to reinstate their rights. In *Sveen*, the statute allowed the insured party the option to send a change-of-beneficiary form to their insurer to ignore the statute’s presumption.³⁰⁰ The Court found this to be a reasonable burden which worked to safeguard the contractual rights of the parties.³⁰¹ The *Sveen* Court pointed to a host of older decisions upholding statutes requiring parties to act to retain contractual rights.³⁰² In each of these

294. *Id.* at 1819 (“The legal system has long used default rules to . . . conform[] to [a party’s] presumed intent.”).

295. *See Allied Structural Steel Co. v. Spannaus*, 438 U.S. 234, 246 (1978).

296. *Sveen*, 138 S. Ct. at 1822.

297. *Id.* at 1823 (“So his reliance interests are next to nil.”).

298. *Gelfert v. Nat’l City Bank of N.Y.*, 313 U.S. 221, 234 (1941).

299. *See City of El Paso v. Simmons*, 379 U.S. 497, 515 (1965) (“[T]he Constitution is ‘intended to preserve practical and substantial rights, not to maintain theories.’” (quoting *Davis v. Mills*, 194 U.S. 451, 457 (1904))).

300. *Sveen*, 138 S. Ct. at 1823.

301. *See id.* (noting that the statutes required a “fairly painless” paperwork requirement).

302. *See, e.g., Jackson v. Lamphire*, 28 U.S. 280 (1830) (upholding a law requiring recording of deed); *Vance v. Vance*, 108 U.S. 514 (1883) (validating a law requiring public registration of mortgages); *Texaco, Inc. v. Short*, 454 U.S. 516 (1982) (validating a law terminating mineral rights upon failure to file a statement of claim).

cases, any party to the contract could opt-out individually. An analysis of *Sveen* and related cases shows that the Court sees the reinstatement of rights as a key part of substantial impairment. Indeed, the reinstatement of rights section of *Sveen* was substantially longer than any other analysis.³⁰³ While close calls on the other substantial impairment factors appear to be flexible, it seems unlikely any of the relevant Contracts Clause cases would have found no substantial impairment without a legislative opt-out clause.³⁰⁴

If a court were to find all three of these elements fulfilled, then it would find there is no substantial impairment on the contractual relationship and uphold the law. If a court did find an element of impairment, it would then move to the second prong: does the legislation achieve a significant public policy purpose?

b. How Courts Determine “Public Policy” Under the Contracts Clause

The leading case on public policy purpose is *Home Building & Loan Ass’n v. Blaisdell*. In that case, the Court reviewed a state law giving mortgagors additional protections over a temporary period of time during the height of the Great Depression.³⁰⁵ While finding the law *did* impair mortgage contracts, the Court upheld the statute on public policy grounds for four reasons: (1) the existence of an economic emergency; (2) the law was created to protect basic societal interests and not favor one party; (3) the law was appropriate in light of the issue; and (4) the law was not manifestly unreasonable.³⁰⁶ Subsequent cases have required impairing legislation to “protect a broad societal interest,”³⁰⁷ be tailored to the specific issue at hand,³⁰⁸ and be in

303. See *Sveen*, 138 S. Ct. at 1823–25 (analyzing reinstatement of rights issue extensively).

304. In *Sveen* and similar cases, the Court generally lays out a case that even if there are slight elements of contractual impairment regarding the contractual bargain and reasonable expectations, the reinstatement rights obviate the need for further analysis. *Id.* at 1826 (“Just like Minnesota’s statute, [precedent] hinged core contractual benefits on compliance with noncontractual paperwork burdens. When all is said and done, that likeness controls.”).

305. *Home Bldg. & Loan Ass’n v. Blaisdell*, 290 U.S. 398 (1934).

306. See *id.* at 444–46 (analyzing the state law under existing precedent).

307. *Allied Structural Steel Co. v. Spannaus*, 438 U.S. 234, 249 (1978).

308. *W.B. Worthen Co. v. Thomas*, 292 U.S. 426, 434 (1934) (voiding a state law under the Contracts Clause because it “contain[ed] no limitations as to time, amount, circumstances, or need”); see also *U.S. Trust Co. of N.Y. v. New Jersey*, 431 U.S. 1, 31 (1976) (noting the law at issue was overly broad).

response to some unusual event.³⁰⁹ As such, even if a law impairs the obligations of contracts, it can still be held valid if it fulfills the idea of protecting a “significant public policy purpose.”

ii. Contracts with No Fallback Language Can Have Mandated Replacements

The legislation proposed in this Note would mandate that any contract without fallback language be replaced with SOFR and ARRC’s spread adjustment upon discontinuation. For this subset of contracts, it is highly unlikely a court would find constitutional issues under the Contracts Clause.

Much like the Minnesota law at issue in *Sveen*, the legislation proposed in this Note would honor a party’s intent at the time of contracting. It is reasonable to assume the parties to a variable rate financial contract would want it to continue as normally as possible upon discontinuation of LIBOR. It makes no difference that the parties might not have conceived of a discontinuation of LIBOR at the time of contracting; like the Minnesota law, the legislature can reasonably assume the parties would have wanted the contract to continue with a similar rate had they known LIBOR’s discontinuation was a possibility. Indeed, if they had wanted the contract to cease upon the unavailability of LIBOR, they could have contracted to do so.

The legislation proposed here would likewise continue the parties’ reasonable expectations with a substantially similar interest rate and ensure no party obtains a strategic, procedural advantage. SOFR and the spread adjustment are meant to effectively imitate USD LIBOR past discontinuation, thereby providing minimal bumps on the road to completion.³¹⁰ A contractual party would have a hard time arguing their expectations for performance under the contract are hindered by the replacement of a nonexistent LIBOR; without this legislation, the contract would be thrown into uncertainty, something the parties were likely not expecting. Courts are also reluctant to allow parties to escape performance.³¹¹

309. See *U.S. Trust Co.*, 431 U.S. at 31 (“By contrast, in the instant case the need for mass transportation in the New York metropolitan area was not a new development, and the likelihood that publicly owned commuter railroads would produce substantial deficits was well known.”).

310. See *supra* Part I.E.1.i.

311. See *City of El Paso v. Simmons*, 379 U.S. 497, 506–07 (1965) (“For it is not every modification of a contractual promise that impairs the obligation of contract under federal law . . .”).

Finally, the mandatory application of the legislation to contracts without fallback language does not require an opt-out provision. Whereas almost all Contracts Clause cases deal with the modification of existing obligations, here there are none: the contract is literally silent as to obligations if LIBOR is discontinued. The parties to the contract are still obligated to pay, but there is no clear interest rate. The legislation proposed here would allow continued performance of obligations under the contract with an almost identical interest rate. In addition, LIBOR's discontinuation is now well-known. Parties currently have the opportunity to try to change their obligations under existing legacy financial contracts through amendments, thereby side-stepping the proposed legislation.

While it is unlikely a court would find this law substantially impairs contracts with no fallback language, the proposal would still pass the second prong of the test because there is a significant public policy purpose. This proposed legislation serves to avoid market chaos by providing a reasonable alternative to ambiguous contractual language. In addition, it fulfills the requirement of being a narrowly tailored response to an unusual event.³¹² The replacement rate will be tailored to ensure it is as close to USD LIBOR as possible, thereby not favoring one of the parties. And the replacement language is narrowly tailored to fix the LIBOR discontinuation problem for contracts with no language to the contrary, making it both appropriate and reasonable. Unlike in *Blaisdell*, there is no economic emergency similar to the Great Depression. However, the Court specified that general economic protections are good enough to justify public policy, noting the state has a "fundamental interest[] [in] . . . the use of reasonable means to safeguard the economic structure upon which the good of all depends."³¹³ The proposal here does exactly that; by replacing USD LIBOR in contracts with no fallback provisions, states would be adopting a reasonable means tailored to ensure the public good is protected from negative economic effects.

iii. Contracts with Unworkable Fallback Language Need To Be Provided Unilateral Opt-Outs

Unlike contracts with no fallback language, replacing unworkable fallback language explicitly changes the contractual bargain. As a result, the legislative approach must be different if it wants to avoid an unfavorable court ruling or the potential for lengthy judicial review.

312. See *supra* notes 306–10 and accompanying text.

313. *Home Bldg. & Loan Ass'n v. Blaisdell*, 290 U.S. 398, 442 (1934).

For this cross-section of contracts, the legislation should provide a unilateral opt-out provision for parties who do not want to have SOFR replace USD LIBOR in their financial contracts.

Amending a contract with workable fallback language runs the risk of failing the tests employed by courts to determine substantial impairment. First, parties would have an easier time arguing a mandatory law undermines the contractual bargain by infringing on the intent in forming the contract. Most unworkable fallback language tells an individual to come up with a LIBOR-based rate by polling panel banks.³¹⁴ Unlike contracts with no fallback language, these contracts make clear the parties intended for LIBOR alone to be the rate used in the contract. However, SOFR and a spread adjustment are meant to imitate USD LIBOR, and an argument can be made that the replacement conforms to the intent of the parties by providing a workable LIBOR-like rate. Nevertheless, the argument here is muddy, and courts are reluctant to find no impairment unless the case is clear.

Legislation replacing unworkable fallback language with SOFR would likely not change the reasonable expectations of parties. As noted above, SOFR and the published spread adjustment are designed to imitate USD LIBOR as closely as possible. As such, the interest payment obligations of the parties are largely unchanged by the legislation, and neither side gains or loses a structural advantage by swapping out unworkable fallback language with a similar rate.

The last factor in a substantial impairment test is the one most likely to fail if the legislation does not include a unilateral opt-out. Courts have placed the greatest Contracts Clause emphasis on whether a party can preserve their rights under the original contract.³¹⁵ Without the unilateral opt-out, a party who does not want a SOFR replacement would essentially be forced to accept the change if the other parties agreed with the switch. The inclusion of the unilateral opt-out clause should convince a court against finding substantial impairment and spare this legislation additional review under the public policy prong of the Contracts Clause analysis. However, even if a court takes this step, the legislation will be on solid ground. Similar to contracts with no fallback language, the legislation here is tailored to the specific problem at hand and seeks to avoid a severe economic impact. In addition, it is even more narrowly tailored because it gives any party the right to avoid the legislative solution and seek redress in the courts.

314. See *supra* note 231 and accompanying text.

315. See *supra* notes 300–04 and accompanying text.

iv. *Difference Between Note Proposal and ARRC Recommended Language*

ARRC has recently released legislation similar to this Note's proposal.³¹⁶ While similar in many respects, three key differences distinguish ARRC's proposal and this proposal. First, ARRC's proposal would require a unanimous opt-out by all parties to a contract with unworkable fallback language.³¹⁷ This Note instead proposes a unilateral opt-out to ensure the legislation passes constitutional muster.³¹⁸ Second, the ARRC language would provide "safe harbor" for agents who select SOFR as a replacement rate when the contract gives them such power.³¹⁹ This Note proposes no such legal cover. Finally, this Note proposes a specific judicial route for parties opting out of the legislative solution, discussed in depth below in Section C.

ARRC's proposal for unworkable fallback language likely flows from a different analysis of the Contracts Clause.³²⁰ Unfortunately, the judicial history does not appear to support the idea that a party's rights are safeguarded through a unanimous consent opt-out clause. Instead, courts look to whether one party, dissenting from all others, can choose not to accept the legislative solution.³²¹ Courts would almost certainly find substantial impairment, and the law's fate would rest on public policy arguments. But the ARRC proposal would also likely run into issues on the public policy front. Courts have typically required narrow tailoring for legislation impacting contracts and concrete justifications for doing so.³²² ARRC's proposal is somewhat tailored to the solution, but this Note's legislative proposal shows additional tailoring is possible. In addition, the justification for a unanimous opt-out relies on uncertain arguments. ARRC was worried flexibility to opt-out would lead to a flood of litigation in New York courts, overburdening the system.³²³ But previous court precedent does not support "possible" problems as a valid public policy override

316. See PROPOSED LEGISLATIVE SOLUTION, *supra* note 255, at 13–20.

317. *Id.* at 5.

318. See *supra* Part III.B.2.iii.

319. See PROPOSED LEGISLATIVE SOLUTION, *supra* note 255, at 15–16.

320. See, e.g., Alt. Reference Rates Comm., *supra* note 274 (stating the group believes the proposed legislation steers clear of Contracts Clause and Due Process concerns).

321. See *supra* notes 300–04 and accompanying text.

322. See *supra* note 308.

323. See PROPOSED LEGISLATIVE SOLUTION, *supra* note 255, at 4, 7, 9, 12 (noting the potential burden on New York courts).

to contract infringement.³²⁴ If anything, the relative absence of litigation following the euro transition contravenes the theory that there will be a flood of litigation to prevent in the LIBOR transition, though as noted above, that transition is different from LIBOR on many fronts. Even so, there is no guarantee ARRC's unanimous opt-out proposal would fail constitutional muster.³²⁵ The unprecedented nature of this transition, and the economic issues implicated, could certainly convince a court to accept mandatory changes.

ARRC's safe harbor provision poses the greatest risk of failing the Contracts Clause. As noted above, some contracts give an agent to the contract the ability to choose a replacement rate should LIBOR be unavailable.³²⁶ ARRC's proposed legislation specifically provides that those agents can select SOFR and be free from liability from other parties.³²⁷ Through this, the proposal specifically eliminates a contractual right to sue the agent without giving parties any chance to get it back, a clear instance of substantial impairment. The public policy arguments for this provision are likely the same as the unanimous opt-out clause, namely a smoother economic transition and the prevention of unnecessary litigation. But the argument to prevent litigation here is more tenuous; the volume of contracts with these provisions is much lower than the broader category of "unworkable fallback language."³²⁸ It seems likely courts would cast a suspicious eye towards the safe harbor provision for this smaller subset of contracts.

This Note's proposal is similar to ARRC's, but key differences arise when considering the rights of parties to contracts with certain

324. See *Home Bldg. & Loan Ass'n v. Blaisdell*, 290 U.S. 398 (1934) (generally focusing on the explicit facts of an existing economic emergency in upholding the law interfering with private contracts).

325. See, e.g., Marc Gottridge & Charles Barrera Moore, *A Look Ahead: Potential Constitutional Challenges to the Proposed New York Legislation for U.S. Dollar LIBOR Contracts*, LAW.COM: N.Y. L.J. (May 26, 2020, 11:00 AM), <https://www.law.com/newyorklawjournal/2020/05/26/a-look-ahead-potential-constitutional-challenges-to-the-proposed-new-york-legislation-for-u-s-dollar-libor-contracts> ("At this early stage, the proposed legislation appears likely to survive Contract Clause and non-delegation challenges, albeit not without a fight.").

326. See ALT. REFERENCE RATES COMM., *supra* note 131, at 33 ("[M]ortgages generally have fairly robust language allowing the noteholder to choose a new rate if LIBOR was permanently discontinued.").

327. See PROPOSED LEGISLATIVE SOLUTION, *supra* note 255, at 15–16.

328. Most contracts giving agents discretion to choose a new rate are contained within consumer mortgages and similar financial contracts, which pale in comparison to unworkable fallback language contracts like interest rate swaps, interest rate options, and FRNs. See ALT. REFERENCE RATES COMM., *supra* note 131, at 2 tbl.1 (illustrating outstanding USD-LIBOR linked contracts by type).

fallback language. ARRC's proposal mandates changes in most contracts, while this Note gives parties greater flexibility, thereby requiring the additional judicial procedures outlined in Section C below.

v. *How Can Legislation Distinguish Between Workable and Unworkable Fallback Language?*

One important distinction to be made in the proposed legislation is the difference between "workable" and "unworkable" fallback language. Contracts with workable fallback language, those successfully converting USD LIBOR to a new rate upon discontinuation, should not be included in the legislation. A review of the current state of fallback language³²⁹ paints a somewhat distinct line between LIBOR-based fallback language and other reference rate fallbacks. Contracts falling back to some other specified reference rate, or that direct one party to choose a different reference rate, are workable since they will be based on rates other than USD LIBOR upon discontinuation. The legislation should define "unworkable fallback language" as any text reverting to some older version of LIBOR (such as the last quoted rate) or asking participants to effectively create their own version of LIBOR by "polling" member banks.

vi. *What Is Defined as a "Discontinuation Event"?*

LIBOR's discontinuation might not be as clean as an on/off switch. Panel banks will no longer be bound to submit LIBOR rates after 2023, but this does not mean every single bank will stop at once. Some analysts have worried a "zombie LIBOR" could take hold after 2023, where fewer panel banks submit rates and the average does not accurately represent actual funding; LIBOR would still be published, albeit at an uncertain rate.³³⁰ It appears the British regulatory authorities tasked with handling the last few years of LIBOR have considered this possibility and are preparing to make the LIBOR transition smoother.³³¹ However, legacy legislation should still consider the

329. See *supra* Part II.C.

330. Randall S. Kulat, *How To Survive the Zombie LIBOR Apocalypse*, 60 MUN. LAW., May-June 2019, at 20, <https://www.saul.com/sites/default/files/ML%20-%20MAY-JUNE%202019-FINAL-MAY%201%202019.pdf> [<https://perma.cc/U6D2-J698>] ("[M]any imaginative market observers are calling it 'Zombie LIBOR,' because it's not really alive now, and it may not really be dead after 2021. LIBOR is no longer considered to be a reliable benchmark rate, and may become even less reliable as fewer banks provide LIBOR estimates and others move to alternate benchmark rates.").

331. See generally Letter from Richard Fox, Head of Mkts. Pol'y, Fin. Conduct Auth., to Scott O'Malia & Katherine Darras, Int'l Swaps and Derivatives Ass'n, Inc. (Jan. 20,

possibility LIBOR may not simply go from on to off. ARRC has worked with industry groups like ISDA to come up with discontinuation event language for new contracts still referencing LIBOR.³³² This language can easily be applied to the legislation, generally providing that discontinuation occurs when the administrator or regulator with authority over LIBOR announces its cessation or if the regulator announces LIBOR is “no longer representative.”³³³ Overall, this catch-all will ensure an orderly switch from LIBOR to replacement rates, taking into account the possibility of a “zombie LIBOR.”

C. PARTIES WHO OPT-OUT MUST PRESENT A REPLACEMENT PLAN TO COURTS WITH INCREASED EQUITABLE POWERS

The final approach advocated by this Note is a novel one, but it is intended to balance the constitutional requirements under the Contracts Clause with the public policy goals of ensuring contractual stability and protecting the judicial process. For those parties choosing to opt-out of the SOFR replacement language, the legislation should: (1) state that discontinuation of LIBOR is not an excuse for nonperformance; (2) require the opting-out party to present an alternative plan to the counterparties to continue performance under the contract; (3) require a mandatory settlement conference if private amendments cannot be reached; and (4) give courts increased equitable powers to resolve USD LIBOR legacy contracts still in contention.

The proposed legislation would require parties to continue their obligations under existing contracts. Legislatures have a strong public policy argument in requiring contractual performance, both in providing contractual stability and preventing a mass disruption in financial contracts that could potentially cause economic harm. There is precedent for such a mandate. In the New York euro transition legislation,

2020), <https://www.isda.org/a/E1LTE/FCA-letter-to-ISDA-on-Non-representative-LIBOR-January-2020.pdf> [<https://perma.cc/MK94-K285>] (explaining FCA’s stance towards “Zombie LIBOR” and steps being taken to mitigate possible problems).

332. See, e.g., Letter from Tom Wipf, Chair, Alt. Reference Rates Comm., to Full ARRC Membership (Aug. 10, 2020), https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2020/ARRC_Letter_on_ISDA_Protocol.pdf [<https://perma.cc/MK94-K285>] (urging members to adopt forthcoming ISDA protocols on fallback language made in consultation with ARRC).

333. See ALT. REFERENCE RATES COMM., SUMMARY OF ARRC’S LIBOR FALLBACK LANGUAGE 4 (2019), https://www.newyorkfed.org/medialibrary/Microsites/arrc/files/2019/LIBOR_Fallback_Language_Summary [<https://perma.cc/7MTC-DBQQ>] (describing “pre-cessation triggers”).

parties were explicitly not excused from performance because of the discontinuation of individual European currencies.³³⁴

Parties choosing to opt-out would be required to present an alternative solution for performance to their counterparties in the contract. For example, a party could instead propose to use a version of OBFR or AMERIBOR in place of SOFR. This solution is somewhat novel in its specificity, but previous Contracts Clause cases show courts are generally satisfied with requiring parties to take steps to preserve their contractual rights. The Supreme Court has long held that laws imposing a “paperwork” requirement for one party to retain their rights is generally acceptable.³³⁵ Indeed, the Court has instead focused on whether the additional burden “lessen[s] the binding efficacy of [the party’s] contract.”³³⁶ Under this requirement, all parties would still be bound by the contract during amendment negotiations, and if those fail, the opt-out party would preserve their rights to bring suit.

If all parties to the agreement cannot agree, the plan would need to be presented to state courts. The opting-out party would first be required to submit their proposed plan during a mandatory settlement conference. There is precedent for this solution in New York; a law enacted during the housing crisis requires parties to a foreclosure action to enter a settlement conference before bringing an action directly to the court.³³⁷ This step would help alleviate concerns New

334. N.Y. GEN. OBLIG. LAW § 5-1602 (McKinney 2019) (authorizing the euro as a “commercially reasonable substitute” for contracts containing currencies replaced by the euro).

335. See, e.g., *Sveen v. Melin*, 138 S. Ct. 1815, 1818 (2018) (“This Court has long held that laws imposing such minimal paperwork burdens do not violate the Contracts Clause.”); *Conley v. Barton*, 260 U.S. 677, 681 (1923) (“It is recognized that the legislature may modify or change existing remedies or prescribe new modes of procedure without impairing the obligation of contracts if a substantial or efficacious remedy remains or is given, by means of which a party can enforce his rights under the contract.”); *Gilfillan v. Union Canal Co. of Pa.*, 109 U.S. 401, 407 (1883) (finding that legislation could require parties to bond contracts to expressly agree or disagree in writing to “a plan proposed . . . for the compromise and adjustment of matters of difference affecting their common interests”); *Curtis v. Whitney*, 80 U.S. 68, 71 (1872) (“The right[s] . . . remain[], and can be enforced whenever the party gives requisite legal notice.”); see also *supra* note 302.

336. *Curtis*, 80 U.S. at 71.

337. See N.Y. C.P.L.R. 3408 (McKinney 2020) (requiring a mandatory settlement conference in residential foreclosure actions). A somewhat similar law in Minnesota gave insolvent farmers the option to mediate before court proceedings could begin. See Farmer-Lender Mediation Act of 1986, MINN. STAT. § 583 (2019) (providing insolvent farmers an option to mediate prior to an action started by creditors). The law was upheld against a Contracts Clause challenge. See *Laue v. Prod. Credit Ass’n of Blooming Prairie*, 390 N.W.2d 823 (Minn. Ct. App. 1986).

York courts would be flooded with litigation. Ideally, mandatory settlement conferences will deter parties from frivolous litigation by giving them an outlet to settle prior to costly court battles.

If the settlement conference is unsuccessful, courts should be given additional equitable powers to reform LIBOR-based contracts. Contract law generally provides for contract reformation in limited circumstances, such as when the parties mistakenly wrote a provision or had a mutual mistake as to a key fact in the contract.³³⁸ Here, the mistake as to the contract would be a misunderstanding as to a basic assumption underlying the contract: the continuity of LIBOR as a reference rate. Under such circumstances, courts traditionally rescind contracts instead of reforming them.³³⁹ But the equitable powers granted to courts are not static. The Supreme Court has long ruled that Congress has the ability to provide additional equitable powers to federal courts, and state legislatures likewise have the ability to determine the bounds of equity within their own courts.³⁴⁰ In this case, the legislation would narrowly give state courts additional powers to reform USD LIBOR-based legacy contracts to ensure continued performance. Without this additional power, courts would likely be forced to rescind contracts in litigation, thereby threatening contractual and economic stability for many USD LIBOR legacy contracts.

There are some concerns that the ubiquity of LIBOR could lead to an overload of cases in New York state courts upon discontinuation. However, the legislation proposed here is aimed at pushing parties away from litigation while reserving their legal rights. The mandatory nature of continued performance would ensure parties are not incentivized to litigate solely for the purpose of nonperformance. In addition, the requirement to present an alternative plan and the possibility of costly court battles to argue over a slightly different reference rate is likely to deter parties from frivolous litigation. Instead, parties are likely to either accept the replacement legislation or seek to find private solutions before LIBOR discontinues. Indeed, it appears there were relatively few cases related to contractual disputes during the euro transition, which used similar statutory language.

The unique third step proposed here is aimed at preventing constitutional problems and giving courts the necessary tools to quickly

338. RESTATEMENT (SECOND) OF CONTS. § 155 (AM. L. INST. 1981).

339. *Id.* § 152.

340. *Grupo Mexicano de Desarrollo S.A. v. All. Bond Fund, Inc.*, 527 U.S. 308, 333 (1999) (“The debate concerning . . . [equitable] power[s] . . . should be conducted and resolved where such issues belong in our democracy: in the Congress.”).

resolve any litigation arising out of LIBOR's discontinuation. With viable replacement legislation, parties can be gently pushed towards better contractual alternatives while preserving their rights and ensuring the smooth operation of state courts.

CONCLUSION

LIBOR, the world's most important number, is going away. While many questions remain about the path forward, one is pressing: what to do about legacy contracts referencing LIBOR when it ceases to exist. Private groups and public entities have proposed replacement rates for new contracts, but solutions for legacy contracts are still unsettled. While some legacy contracts with clear language for discontinuation solve themselves, the remaining silent or unworkable contracts are not so easy. Legislatures and courts have immense powers available to them to ensure the discontinuation of LIBOR does not lead to catastrophic economic ramifications. Legislatures should ensure contracts with no fallback language are amended to allow for recommended replacement reference rates. Those same legislatures can gently push contracts with unworkable language towards a similar solution, while at the same time protecting parties' rights and providing courts the power to reform such contracts.